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ABSTRACT

To examine the feasibility of introducing a program of cooperative education at the British Columbia Institute of Technology (BCIT), a task force assessed the problems encountered by other institutions which have introduced cooperative education. Attention was given to the support that might be expected for cooperative education among students, faculty, and employers. The committee considered the impact which cooperative education will have on course scheduling, labor/management relations, student supervision, departmental responsibilities, and resource use. The task force also examined the applicability of different models of cooperative education and the rate of implementation. The committee found that the introduction of cooperative education would require achievable changes in program scheduling, faculty working conditions, organizational structure, and resource allocation. It was concluded that several patterns of cooperative education, and in particular one in which periods of work experience are alternated with terms of classroom instruction, would be practical at BCIT. Recommendations supported cooperative education, suggested dates for implementation, and offered guidelines for dealing with the implications of the program. (Survey forms, plans for implementation, a sample training plan record, and articles relating to cooperative education are appended.))LRA)

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BRITISH COLUMBIA INSTITUTE OF TECHNOLOGY

THE FEASIBILITY OF COOPERATIVE EDUCATION

AT B.C.I.T.

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CE 021 838

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March , 1978

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The Task Force on Cooperative Education would like to thank Paul Parikh for his dedicated efforts in raising the awareness and knowledge of Cooperative Education on Campus. Without his suggestions and proposals, the Task Force would not have progressed to the point of being able to present this interim report on the feasibility of Cooperative Education at B.C.I.T.

-Brian Gillespie,
Chairman, Task Force on
Cooperative Education.

SUMMARY

In August of 1977, a Task Force was struck to examine the feasibility of introducing a programme of cooperative education at B.C.I.T. In conducting its inquiries, the committee attempted to generalize from the experience of other institutions, while remaining alert to the specific circumstances found at B.C.I.T. Particular attention was given to the support that might be expected for cooperative education among students, faculty, and employers. The committee considered the impact which cooperative education will have on course scheduling, labour/management relations, student supervision, departmental responsibilities, and resource use. Also raised for discussion were questions concerning the applicability of different models of cooperative education, and the rate of implementation. The committee found that the introduction of cooperative education would require achievable changes in programme scheduling, faculty working conditions, organizational structure, and resource allocation. On the basis of its findings, the committee concludes that several patterns of cooperative education, and in particular one in which periods of work experience are alternated with terms of classroom instruction, would be practical at B.C.I.T. The committee's major recommendation therefore supports cooperative education, and suggests suitable dates and enrolment figures for implementation. Secondary recommendations made by the committee offer guidelines for dealing with the implications of the programme.

PURPOSE OF THE INQUIRY

The Task Force was instructed to investigate and report on the feasibility of implementing cooperative education at B.C.I.T. This issue therefore constitutes the primary problem addressed in the report.

Secondary problems concerning the practicality of cooperative education are raised by the following questions:

> "What is the probability that cooperative education will receive adequate support from students, employers, and faculty?"
>
> "What changes will be necessary in course scheduling, and can these be made?"
>
> "What labour relations issues are likely to arise, and can they be resolved?"
>
> "Can B.C.I.T. recognition be given for the assignments completed by students while off campus?"
>
> "Can cooperative education be administered effectively within the existing organizational structure of B.C.I.T.?"
>
> "If cooperative education is feasible, how large a programme should be attempted in the initial stages, and when should it be implemented?"
>
> "What financial, staffing, and physical resources are necessary to launch the programme?"

The committee's responses to the foregoing questions occupy the bulk of the report.

BACKGROUND TO THE REPORT

During 1976 and early 1977, the potential advantages of cooperative education were brought to the attention of B.C.I.T. through the efforts of a number of concerned individuals and groups. In response, the Principal's first Five year Plan, delivered in the Spring of 1977, contained a commitment to explore the matter further. On August 9, 1977, a committee was formed to investigate and report on the feasibility of introducing cooperative education at B.C.I.T. The committee is known as the Task Force on Cooperative Education.

G.E. Bissell	Business Division
W.J. Bogyo	Engineering Division
J.R.H. Curtis	Business Division, Staff Society
R.D. Forbes-Roberts	Manager, Canada Employment Center, B.C.I.T.
B. Gillespie	Core Division, Committee Chairman
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C.C. Lawrence	Core Division
V.M. Parikh	Consultant, Educational Planning and Cooperative Education
R.E. Ridsdale	Engineering Division
D.W. Martin	Health Division

The committee completed its preliminary investigations in January, 1978. This report presents a summary of these investigations, together with a statement of the committee's findings.

METHODS

METHOD OF INQUIRY

One of the committee's first concerns was to assess the problems encountered by other institutions which have introduced cooperative education. In this, the Task Force relied heavily on Dr. V.M. Parikh. The committee also benefitted from the visits made to B.C.I.T. by two leading practitioners in the field, Donald Hunt (University of Detroit) and Gordon Lancaster (Fanshawe College). The committee's observations concerning the experience of other institutions are drawn largely from these sources.

Whatever the experiences of other schools, the committee insisted upon examining cooperative education in the light of the unique circumstances in which B.C.I.T. finds itself. Here, the Task Force depended largely on the familiarity of committee members with the B.C.I.T. operation. In the question of student, faculty, and employer reactions to cooperative education, the Task Force felt obliged to test the reactions of these groups through public meetings, informal individual discussions, and questionnaires. Although these surveys by no means satisfy the requirements of social research, the committee believes the results are sufficiently reliable to meet its own ends.

In its deliberations, the Task Force adopted an adversary tactic, with members alternately seeking and answering objections to cooperative education. This approach resulted in all issues being given a thorough and balanced discussion.

METHOD OF PRESENTATION

Although some of those who read this report will wish to study it in detail, we realize that others will be content with the "Summary", while the majority will no doubt concentrate on those portions which most interest them. For those who are encountering the concept for the first time, cooperative education is defined, described, and given a brief historical treatment in the "Introduction". Each of the secondary questions itemized under the heading, "Purpose of the Inquiry", is treated separately in the body of the report. A review of the findings presented in these sections precedes the committee's recommendations in the final portion.

Cooperative education is attracting widespread attention as a means of achieving educational objectives at both the secondary and post-secondary levels. Consequently, we have attempted to describe a suitable process for exploring the feasibility of cooperative education, not only at B.C.I.T., but also at other schools considering such a programme.

INTRODUCTION

DEFINITION OF COOPERATIVE EDUCATION

By a cooperative education programme, we mean one in which an academic, technical, or vocational institution cooperates with an employer or group of employers to provide opportunities by which students may pursue valid learning objectives through planned and supervised periods of employment in responsible work assignments.

DESCRIPTION OF COOPERATIVE EDUCATION PROCESSES

In cooperative education, the work environment becomes an extension of the campus, in the sense that work experience is deliberately managed as an integral element of the educational process. The skills, knowledge, and understanding which the student acquires on campus are tested and applied in genuine work situations. To achieve this end, the school identifies employers who are willing and competent to offer adequate on-the-job training, and it assists students in securing suitable positions. Prior to the commencement of a work assignment, the institution, employer, and student agree on the educational objectives to be reached, the criteria by which mastery of these objectives is to be demonstrated, and the learning experiences which the student is to be offered. The student continues to be registered at his or her institution while off campus, and faculty members visit the work site for consultation, advice, and evaluation. Reports submitted by the student, employer, and faculty advisor provide the basis for assigning credits. A systematic combination of academic study and work experience continues until the student has graduated.

THE MAJOR MODES OF COOPERATIVE EDUCATION

From an examination of cooperative programmes in nearly 1000 institutions throughout Canada and the United States, four models of cooperative education have been identified. These are: (1) the alternating mode; (2) the field mode; (3) the parallel mode; and (4) the extended-day mode (see Appendix A).

1. ALTERNATING MODE

As the name suggests, periods of full-time school are alternated with periods of full-time employment of approximately equal duration. Employment is generally paid, and a student often will return to a single cooperative employer during successive terms. Universities, and other degree-granting institutions normally provide four to six cooperative work terms in a four- to five-year programme. At other post-secondary institutions, two or three work terms, each lasting three to four months, normally are provided in a programme of thirty to thirty six months. The student body should normally be divided into at least two groups, so that some students are occupied on cooperative assignments while others are on campus. To assure students that the required courses will be available to them in the proper sequence, it is often necessary to operate the school for twelve months each year, and to offer some courses twice within a given academic year.

2. FIELD MODE

In this pattern, students leave the campus, as a group, for short-duration work assignments once during any given academic year. Employment may be paid, but more frequently than for other modes, voluntary jobs are used. Where paid employment cannot be found, students must have some other means of financial support during the field period.

3. PARALLEL MODE

Students participating in this mode attend classes during one segment of the day and work part-time during another portion of the same day. Jobs must be within commuting distance of the school, and they are generally paid.

4. EXTENDED-DAY MODE

This is similar to our night-school programme. Students work part or full-time during the day and attend school on a part-time basis during the evening hours. This mode attracts older students who are interested in additional education for job advancement and self-development. In a strictly definitional sense, this mode sometimes cannot be regarded as cooperative education, since the institution may not be required to find appropriate work assignments for its students.

ADVANTAGES AND DISADVANTAGES OF COOPERATIVE EDUCATION

A comparison of the advantages and disadvantages of cooperative education, for students, employers, and participating academic institutions, is given in Table 1.

This comparison is given here solely as background information relevant to an over-all understanding of cooperative education. The reader is cautioned that this presentation makes no attempt to *weigh* the benefits and adverse consequences of cooperative education.

TABLE 1

Advantages of Cooperative Education for Students	Disadvantages of Cooperative Education for Students
- income while in training	In some cases, students may find that:
- assistance in identifying work assignments	- they earn less in cooperative work assignments than in some forms of highly-paid summer employment
- counselling in applying for positions	- more time is required to graduate
- academic recognition for work experience	- although the tuition fee for each term may remain the same, the extra terms required for work assignments may increase the total cost of tuition, depending on the fiscal policies of the institution
- orientation to the world of work	- geographic mobility is required, when jobs are not locally available
- an introduction to potential employers of graduates	
- work experience which is relevant to their chosen occupation	
- a chance to test the relevancy of campus learning	
- a means of evaluating occupational choices before graduation	
- experience with up-to-date technology	
- education which is more individualized than that typically found in most institutions	

TABLE 1 (Continued)

Advantages of Cooperative Education for Employers	Disadvantages of Cooperative Education for Employers
From the point of view of employers, cooperative education has been found to yield (see Appendix B): - a reliable source of competent labour during periods of peak demand - a means of screening potential recruits for permanent employment - lower recruitment costs - superior applicants for permanent positions - promotion of the company among students - an infusion of new ideas - improved relationships with the training institution - opportunities to make education more relevant to occupational demands - a return for financial assistance to deserving students - graduates who are better prepared for employment	From the employer's perspective, the major disadvantages stem from the administrative burden involved in negotiating and managing work assignments

TABLE 1 (Continued)

Advantages of Cooperative Education for Schools	Disadvantages of Cooperative Education for Schools
To the sponsoring institution, cooperative education can provide: - the potential for increased enrolment, without the usual expansion of physical facilities - a means of ensuring that its courses are more attuned to the needs of employers - a vehicle for technical up-dating of faculty - a device for demonstrating to students the value of academic competence in the world of work - a mechanism for instilling professional pride and other attitudes critical to employment success - a method of improving training effectiveness	To the school, disadvantages include: - an increase in staff, to cope with an additional teaching and coordination load - initially, an increase in administrative problems due to the introduction of an innovative programme and the staffing, organizational and scheduling changes which result

HISTORY OF COOPERATIVE EDUCATION

Although only recently introduced in British Columbia, cooperative education is by no means a new or experimental concept. Cooperative education programmes were founded as long ago as 1903 in the United Kingdom, and 1906 in the United States. The movement spread gradually during its early years, with engineering schools being the major participants. The first involvement of liberal arts students appears to have occurred at Antioque, in 1932. Roughly 35,000 students are presently enrolled in cooperative programmes in England and Wales, and about 300,000 throughout the United States. Cooperative education programmes are now found in countries around the world. Canadian involvement dates back to 1957, with a programme initiated by the University of Waterloo. The University of Victoria, which began a cooperative programme in the present school year, is the first post-secondary institution to adopt cooperative education in British Columbia.

SUPPORT FOR COOPERATIVE EDUCATION

Cooperative education is likely to succeed at B.C.I.T. only if it receives sufficient support from students, faculty and employers. This section of the report reviews the committee's findings concerning the initial response made by these three groups to the concept of cooperative education. In gathering the data on which our findings are based, our intention was to *explore* the probable reactions to cooperative education, rather than to *measure* the degree of support that might be forthcoming. As a result, most of our information has been collected through informal discussion and observation. No attempt has been made to arrive at a quantitative assessment of the support that can be expected.

STUDENT REACTIONS

There is no evidence to suggest that other institutions attempting cooperative education have experienced difficulty in persuading students to participate in the programme. At B.C.I.T., where occupational aspirations typically are regarded as the primary goals of education, it seems reasonable to assume that student participation will be even more enthusiastic than that found at schools which are oriented more to academic values. This assumption is supported by the explorations so far conducted by Dr. Parikh.

The committee was very much aware of the dangers involved in raising student expectations until such time as the Institute

has made a decision regarding cooperative education. A very cautious approach therefore was adopted in evaluating student support.

The first step was to inform the Student Association that the feasibility of cooperative education was being studied at B.C.I.T. The philosophy and operational outlines of the programme were then explained to the President and Executive of the Association. The President reacted strongly in favour of the concept, and suggested that it be explained, first to the representatives of each technology and then to the student body as a whole.

Consequently, meetings were arranged with student representatives of the Business, Engineering, and Health Divisions. Considerable discussion and explanation followed the presentations at these meetings, each of which terminated with expressions of enthusiastic support for cooperative education. A number of representatives were sufficiently impressed to demand that their technologies be the first to participate in a cooperative education programme.

On the strength of this response, it was decided to use the student newspaper as a vehicle for eliciting further feedback. Two articles were published simultaneously in Link, one describing the concept and benefits of cooperative education (see Appendix C), and the other raising doubts about the operational details of the scheme. It was hoped that this approach would generate public controversy and debate among the student body. Contrary to this expectation, no organized attempt was made to confront the issues through public meetings or other demonstrations of concern. A number of students, however, became interested enough to contact Dr. Parikh privately. These interviews confirm our opinion that cooperative education will not lack student participation.

Direct student response was sought also through classroom visits. Discussions with classes in Forestry and Environmental Health further strengthened our opinion that cooperative education will appeal to students.

EMPLOYER RESPONSES

The stated aim of B.C.I.T. is "... to produce graduates who, with additional experience, will fill many of the supervisory positions in business and industry."* Programmes at B.C.I.T. are planned to fulfill this aim, guided by Advisory Committees which are composed of practitioners in the field. Largely because of this emphasis on occupational demands, B.C.I.T. graduates continue to find employment readily, even when economic conditions are poor and unemployment is high. The employment success of our graduates leads to the suggestion that employers may view favourably cooperative education ventures proposed by B.C.I.T.

On the other hand, further factors are worthy of consideration in predicting employer reactions to cooperative education. Firstly, cooperative education may catch on slowly in Canada. Secondly, the fact that some students already serve in unpaid positions may make it hard for certain employers to understand why they should provide paid employment to support educational objectives. Finally, the current dismal economic climate is likely to increase the difficulties of obtaining firm job commitments. In view of these factors, the Committee expected to find more resistance from employers than from students.

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* B.C.I.T. Calendar, 1977-1978, page 14.

The committee insisted that the same degree of caution be exercised in approaching employers as was adopted in dealing with students. Employers were advised that, although B.C.I.T. is interested in cooperative education, we are not promoting the programme, and we are not seeking firm job offers; in other words, commitments were neither made nor sought by B.C.I.T. Our objective was to gather, by informal probing, the reactions of a limited number of potential partners in cooperative education.

The explorations conducted in this manner indicate that employers typically will show interest and faith in the scheme. However, we cannot help but point out that considerable promotion and persuasion may be necessary to convert this interest into paid employment opportunities for cooperative students. Unfortunately, until B.C.I.T. has made a commitment to proceed with cooperative education, it is neither feasible nor desirable to test the market more extensively. As a result, our findings cannot be more definitive at this time.

Informal discussions with several large labour organizations indicate that unions will wish to be assured that (1) students will not be used as cheap labour, and will be paid salaries commensurate with training and experience; (2) jobs created for cooperative education will be so designated, and will not be used to take away work from regular union members; and (3) students, like any other employees, will become members of the appropriate union while on work assignments.

FACULTY ACCEPTANCE

B.C.I.T.'s role in meeting the labour requirements of business, industry and government leads one to suspect that work experience might already be a required component in the training offered by most technologies. If this were the case, cooper-

ative education might be introduced as a refinement of existing practices, rather than as an innovative programme. To evaluate this possibility, a questionnaire (see Appendix D) was mailed to all Department Heads. The survey indicates that work experience is required before certification for most of the students enrolled in Health Technologies. However, work experience is required prior to graduation for only 14 percent of students in Business and 8 percent in Engineering (see Appendix E). The mode and duration of field experience varies with the Health Division, according to the requirements of professional associations and accreditation agencies. In the Business and Engineering Departments, the average duration of required work experience is only two weeks. We must conclude that cooperative education may significantly improve the work exposure of most B.C.I.T. students.

If faculty members believe in the value of cooperative education as an educational tool, they will not only integrate cooperative patterns in their curricula, but will also draw upon the off-campus learning and contacts of their students to keep abreast of new technology, and they will help develop new job opportunities through their own acquaintances in the world of work. Faculty support therefore can be a critical element in the success of cooperative education.

The experience of other institutions is that support for cooperative education is likely to be weaker among faculty than among students and employers. To determine whether this experience is to be replicated at B.C.I.T., we first of all surveyed faculty attitudes through two short questionnaires, one of which was distributed to Department Heads and the other to faculty (see Appendices F, G). The response to both questionnaires was poor.

Although the majority of responses were favourable to cooperative education, we cannot draw reliable conclusions from such a small number of returns.

To assess the attitudes of faculty who did not respond to the questionnaire, an informal investigation was attempted through personal and informal meetings. Dr. Parikh explained the concept and answered questions at Department Head meetings in three divisions, at faculty meetings in 11 different departments, and through personal meetings with 27 department heads. In addition, the philosophy and organizational details of cooperative education were discussed on an informal basis with as many as 200 faculty members. Two seminars on cooperative education were also organized. One, on professional development day was given by Donald Hunt, the Director of Cooperative Education from the University of Detroit. Another was given by Gordon Lancaster, Director of Cooperative Education from Fanshawe College in London, Ontario. The first of these seminars was attended by about 100 faculty members and the second by only a handful. The results are as follows:

1. many faculty feel they are too busy with heavy teaching loads and other responsibilities;

2. others resist the role redefinition required by cooperative education;

3. some instructors believe their responsibilities are limited to the traditional classroom setting, and that the learning which can occur off-campus is beyond their terms of reference;

4. instructors in core area subjects, which are not directly oriented to specific occupations, may have difficulty in understanding the value of paid employment as a means of achieving their particular educational objectives;

5. many instructors simply resist any innovation, particularly if they perceive it to be originating from the administration or other source external to their department;

6. many carried a preconceived but unfounded notion that cooperative education will inevitably interfere with summer vacations and will thrust upon them the added responsibility of coordinating and finding jobs for their students.

At present, although many faculty are enthusiastic about cooperative education, it would appear that some are opposed or are at best disinterested.

Practitioners of cooperative education have found elsewhere that faculty support for the programme tends to grow as the programme progresses. In the words of James Wilson,

> "Although some faculty may never be persuaded, experience has shown that when a systematic effort is made to work with teaching faculty and to keep them appraised of what their students are doing at work, the relationships between the coordination staff and the faculty become very positive and faculty support for the plan is strengthened."*

Initial reactions to cooperative education cannot be relied upon as an indication of the support that might ultimately be won.

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* Handbook of Cooperative Education, Asa S. Knowles (ed.) Jossey, Bass Inc., San Francisco, 1971.

This observation is consistent with our experience at B.C.I.T. The Task Force has consciously tried to keep instructors informed about the project and to encourage participation in project activities. At the same time, faculty have been asked for suggestions, comments, employer contacts, and other ideas through phone calls, individual and small group discussions, occasional memos, and so on. We have found that faculty interest increases as knowledge and understanding of cooperative education spreads. On the whole, instructors who took time to study the material mailed to them, or who investigated operational details with Dr. Parikh, became actively interested in the project.

COMMITTEE FINDINGS

On the basis of the explorations so far conducted by the Task Force, it would appear that there is sufficient support among students, faculty, and employers to warrant a modest experimental programme in cooperative education. At other institutions, support has increased as people become more familiar with the benefits and operational details of cooperative education. Expansion of the programme at B.C.I.T. necessarily would depend on a similar trend developing here.

COURSE SCHEDULING IMPLICATIONS

The Task Force wished to satisfy itself that student participation in work assignments would not raise unresolvable problems in the scheduling of courses. It quickly became apparent that the Extended Day Mode, in which students work during the day and attend classes at night, can be adapted readily to a modification of the existing night-school programme. The Parallel Mode, on the other hand, is presently unsuitable at B.C.I.T., because the requirement that students work for a portion of the day conflicts with the rigid 35 hour- week of instruction upon which the Institute insists. Disregarding the Field Mode (which is financially less attractive to students), the Task Force thus was left with the problem of determining whether the Alternating Mode could be implemented without raising serious scheduling difficulties.

Issues such as compatibility with the modified term system, the length of student enrolment, and the sequence of work and campus terms were raised. Five different plans were prepared by Dr. Parikh, illustrating how various sequences of work and campus activities would affect admission dates, graduation dates, the relative numbers of students on and off campus, the timing of student availability for permanent employment, and so on. The details of these plans are presented in Appendix H.

One of these plans may be used here to illustrate the operation of an alternating programme. Let us assume that the Environmental Health Technology* selects Plan 3 as the most

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* Environmental Health Technology is used here simply to develop a model, and has not, in reality, volunteered to participate in the project.

appropriate option. This selection is consistent with the fact that health inspectors are required to have on-the-job experience before they are certified. The present practice, in which students can accept employment only during the summer, means that employers accept the burden of supervising a large number of inexperienced students at a time when permanent staff would prefer to take annual vacation. Plan 3 makes it possible for the employer to train a few students at a time, and to spread this responsibility throughout the year.

If the normal intake of students in this technology is assumed to be 40 students, half this number (Group A) would arrive on campus July 4 to begin a ten-week term of classroom instruction. Group A would remain on campus through a second fifteen-week term. A second batch of students (Group B), would join Group A during the fall term to take courses which are common to both groups.

Throughout this twenty-five week period, a coordinator would locate adequate, paid, off-campus assignments for the students. The coordinator would then secure job data, and interview, counsel, and place in employment commencing January 9 the members of Group A. Students in Group B remain on campus, taking the same courses completed by Group A during the summer term.

In spring, while Group A returns to the Institute, Group B leaves for a six-month work assignment. The alternation of class attendance and on-the-job training continues as shown in Table 2 until each student has completed from 73 to 75 weeks of classroom learning and 34 to 35 weeks of work assignment.

TABLE 2

BCIT TASK FORCE ON COOPERATIVE EDUCATION
CAMPUS/JOB DISTRIBUTION OF STUDENTS UNEQUAL TERMS - PLAN 3: SUMMER AND FALL ADMISSIONS

	Yr-1(78-79)				Yr-2(79-80)				Yr-3(80-81) (steady state reached)				Yr-4(81-82)			
TERM	Su	F	W	Sp	Su	F	W	Sp	Su	F	W	Sp	Su	F	W	Sp
DATES	Jul.4 to Sep.9	Sep.12 to Dec.23	Jan.9 to Mar.17	Mar.27 to June 2	Jul.4 to Sep.9	Sep.12 to Dec.23	Jan.9 to Mar.17	Mar.27 to June 2	Jul.4 to Sep.9	Sep.12 to Dec.23	Jan.9 to Mar.17	Mar.27 to June 2	Jul.4 to Sep.9	Sep.12 to Dec.23	Jan.9 to Mar.17	Mar.27 to June 2
NO. OF WEEKS	10	15	10	10	10	15	10	10	10	15	10	10	10	15	10	10
GRP. A(20)	C	C	J	C*	J	J	C	*	C --- Graduation; Total Weeks: C 73, J 35							
GRP. B(20)	--	C	C	J**	J	C	C	C	J	G) C--Graduation; Total Weeks: C 75; J 34						
GRP. C(20)	--	--	--	--	C	C	J	C*	J	J	C	C*	C	Grad. as GRP B		
GRP. D(20)	--	--	--	--	--	C	C	J**	J	C	C	C	J--Grad. as GRP C			
GRP. E(20)	--	--	--	--	--	--	--	--	--	C	C	J**	J	C	C	C
GRP. F(20)	--	--	--	--	--	--	--	--	C	C	J	C*	J	J	C	C*
GRP. G(20)	--	--	--	--	--	--	--	--	--	--	--	--	--	C	C	J**
GRP. H(20)	--	--	--	--	--	--	--	--	--	--	--	--	C	C	J	C*
STDS. ON CAM 1st yr.	20	40	20	20	20	40	20	20	20	40	20	20	20	40	20	20
STDS. ON CAM 2nd yr.	--	40	40	40	--	20	40	40	--	20	40	40	--	20	40	40
STDS. ON CAM 3rd yr.	--	--	--	--	--	--	--	--	20	20	--	--	20	20	--	--
STDS. ON CAM TOTAL	20	80	60	60	20	60	60	60	40	80	60	60	40	80	60	60
STDS. ON JOBS 1st yr.	--	--	20	20	--	--	20	20	--	--	20	20	--	--	20	20
STDS. ON JOBS 2nd yr.	--	--	--	--	40	20	--	--	40	20	--	--	40	20	--	--
STDS. ON JOBS 3rd yr.	--	--	--	--	--	--	--	--	20	--	--	--	20	--	--	--
STDS. ON JOBS TOTAL	0	0	20	20	40	20	20	20	60	20	20	20	60	20	20	20
GRADUATES TO JOB MARKET	0	0	0	0	40	0	0	0	0	20	20	0	0	20	20	0

* Spring term on campus to be 14 weeks ** On the job 14 weeks spring term

This plan requires staggered admissions, but brings students together on campus three times. These common terms can be used to avoid costly duplication of courses. Furthermore, the plan offers three opportunities to operate common courses for first and second year students, thereby almost eliminating the need for course duplication. A sample course sequence over a five-year period has been worked out in consultation with the Department Head concerned, and is under active consideration by the department.*

The total educational period under this plan is 27½ months, divided into nine segments. Six of these nine terms provide classroom instruction, bringing campus attendance to a total of 73 to 75 weeks. Work assignments, consisting of one 10-week term and one term of 24-25 weeks, occupy a total of 34-35 weeks. A vacation of at least one week is provided between each of the nine terms.

It must be emphasized that Plan 3, although ideal for Environmental Health, may not suit the needs of other technologies. Where Plan 3 is inappropriate, a different scheme (incorporating similar economies in course offerings, equal amounts of time in class, maximum availability of students for work assignments at times which suit the employer, and so on) can be designed.

COMMITTEE FINDINGS

Although the parallel mode of cooperative education would appear to conflict with the 35-hour instructional week at B.C.I.T., the extended day mode could be utilized with little

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* This document is not reproduced here, since other affected departments have not yet been consulted.

modification of the existing night-school programme. Various adaptations of the alternating mode, tailored to the needs of individual technologies, also appear to be feasible. The alternating mode entails an extension of the total educational period, together with more flexible admission and graduation dates. Subject to departmental approval, changes may be necessary, too, in the sequence of course offerings.

STUDENT SUPERVISION AND TRANSCRIPTS

It is possible that some constituents of the Institute will be reluctant to grant official B.C.I.T. recognition for work assignments completed by students while off campus. In this connection, it is important to remember that cooperative employment positions secured by a coordinator will, in effect, become extensions of the campus. Students will occupy such positions at the discretion of both the Institute and the employer. Consequently, a cooperative education student is not permitted to resign from a work assignment without written authority from the coordinator. Likewise, the employer may not release a cooperative education student without first giving the coordinator reasonable opportunity to evaluate and perhaps correct the situation. The ability of B.C.I.T. to supervise and evaluate students is in no way lessened by their absence from the classroom.

In view of the educational value of work experience, particularly when it is explicitly directed towards the achievement of specific and valid learning objectives, it would seem reasonable for B.C.I.T. to grant academic credits for the satisfactory completion of a job term. However, it is difficult to determine exactly how many credits should be given to work assignments by comparison with regular class work. At this point, T.F.C.E. believes that it would be simpler to prescribe completion of a specified number of work terms as a requirement for graduation. Completion could then be judged on a pass/fail basis. A statement indicating that the student has satisfactorily completed the required number of work terms might then be included on the diploma and transcript of each cooperative education student.

Perhaps the most obvious difficulty with such a procedure is that of graduating a student who, through no fault of his or her own, is unable to complete the required number of work terms. Such a situation may arise because of poor job markets, or as a result of problems involving the employer, the coordinator, or the department. In any case, the situation may warrant immediate investigation and appropriate recommendations concerning such matters as: (1) the suitability of the student for the technology in question; (2) the effectiveness of the coordinator in locating jobs; (3) the quality of instruction in that technology; or (4) the ratio between enrolment and the number of graduates demanded by the labour market. To avoid problems in securing work assignments, every technology will have to be extremely responsive to labour market conditions.

FACULTY EMPLOYMENT CONDITIONS

This section summarizes the findings of the Task Force concerning the effects which cooperative education might have on faculty job descriptions, workload, and vacations.

JOB DESCRIPTIONS

If we assume the need for a coordination unit, then it is reasonable to designate as "coordinators" those persons who perform the major functions of such a unit. A coordinator may be defined as "... an educator whose specialization is the provision of meaningful learning experiences in the form of work situations and the assisting of students to relate these experiences to their educational goals."* Notice that this definition emphasizes academic and educational goals rather than employment counselling and placement.

Table 3 summarizes the activities in which coordinators typically are involved. Equipped with a knowledge of departmental objectives, the coordinator first locates adequate work assignments. The salary, duties, and other job details are posted for the information of students. Those who are interested meet first with the coordinator, who helps them prepare a job application, briefs them on responsibilities to the employer and the Institute, and readies them for interview. Upon acceptance of the student by the employer, the coordinator obtains a copy of the appointment letter, specifying the student's rate of pay,

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* "Reflections on What a Coordinator Is", James W. Wilson, (See Appendix I).

position, and term of employment. Soon after the student has been oriented to the job, the student, his or her supervisor, and the coordinator jointly design an individualized training plan compatible with departmental objectives and with the resources available at the job site (see Appendix J). The coordinator usually visits the job site twice during the assignment to secure a performance evaluation from the student's immediate supervisor. A final visit is made to obtain an over-all evaluation, and to collect a final report detailing the total number of hours worked and total student earnings. Throughout, the coordinator is available to both student and employer, should problems arise.

FACULTY WORKLOADS

Because the duties of a coordinator differ from those normally assigned to B.C.I.T. faculty, it is important to establish suitable workload criteria. The workload of teaching faculty normally is determined on the basis of classroom hours. The workload of a coordinator, however, is determined generally by the number of students supervised. This number can be expected to vary according to the technology involved, the availability of jobs, and so on. In addition, we might expect that the number of students assigned to each coordinator can be increased as the programme matures. Based on the estimates presented in Table 3, an initial ratio of 60 students for each coordinator could be used for financial planning purposes in the initial stages of the programme.

TABLE 3

Guidelines for Determining Coordinator to Students Ratio

The ratio 1:60 is based on the following example of the process and the time consumed in developing one off-campus assignment, placing the student in that position, developing the student profile, and monitoring and evaluating the student's progress.

1. Identify potential Cooperative Education participant and secure student data, e.g., transcript, application, for Co-Op. - 1 hour.
2. Locate an adequate off-campus assignment for the student and secure job data - e.g., needs of employer, salary, job responsibility, and availability of training. Set up appointment for the student interview following full explanation of the Cooperative Education approach and the record keeping process. - 3 hours.
3. Advise student of proposed off-campus Cooperative Education assignment and the responsibilities to the employer and the College. Prepare student for interview. - 1 hour.
4. Following acceptance of student by the employer, a training agreement is secured, which identifies the students rate of pay, position, and dates of employment. Copies of the agreement are distributed to the employer, the student, and one is retained in the office. - 2 hours.
5. Following the student's orientation to the Cooperative Education assignment, a training plan is devised by the student and approved by the employer; and, the College representative evaluates the student's learning objectives from the duties assigned. - 2 hours.
6. First visit to the student on the job and secure an evaluation of his performance from the immediate supervisor. - 1 hour.
7. Second on-site visitation for student evaluation. - 1 hour.
8. Secure from the student the report form giving his evaluation of the Cooperative Education assignment. Also, secure a final assignment report giving total hours worked and total earnings for the specific period. - 1 hour.
9. Final contact is made with employer securing the overall evaluation for the specific work period. - 1 hour.

FACULTY VACATIONS AND HOURS OF WORK

In some technologies, it will be necessary to satisfy the requirements of an alternating schedule by offering classes during June, July, and August. This means that some instructors will be asked to teach during the summer, a practice which would interfere with the traditional summer vacation schedule. Although the collective agreement does not stipulate summer as the only period for faculty vacations, many B.C.I.T. faculty no doubt regard this as one of their normal working conditions. To minimize disagreements arising from this issue, the number of summer courses can be kept as low as possible by operating classes on a "concentrated block" basis -- i.e., by completing, within a shorter time period, the total number of instructional hours devoted to any one course. It may well be, also, that faculty members who have no school-age children will welcome winter holidays. A limited number of departures from the usual summer vacation period therefore should be well within the realm of possibility.

The normal instructional load of a B.C.I.T. faculty member is 15 hours of student contact a week spread over the 35 week academic year. Where "concentrated block" courses are introduced, the instructor will be required to increase the weekly student contact hours for the duration of the course. In compensation, a lighter or nil work load can be assigned at other periods. This means that an instructor's work load may not necessarily be evenly distributed throughout the academic year.

COMMITTEE FINDINGS

If cooperative education is to be implemented at B.C.I.T., the job descriptions utilized by the Institute must be modified to recognize the functions performed by cooperative education coordinators. Coordinator workloads will vary somewhat, and may be increased as the programme matures. A greater degree of flexibility than presently found will be necessary in scheduling faculty vacations and weekly contact hours. These considerations do not imply that cooperative education is impractical at B.C.I.T., but they do underline the need for substantial planning, organizing, and negotiating in staff utilization.

ORGANIZATIONAL CONSIDERATIONS

The committee's concerns here centred around the practicality of leaving the administration of cooperative education to the discretion of individual departments. This option would avoid the need for organizational changes at B.C.I.T., and it would place control of the educational process in the hands of those who are best equipped to judge its quality and validity. Moreover, this approach would make it possible for the Institute to be represented, in its dealings with employers, by faculty who are intimately familiar with the technical background necessary to specific occupations. On this basis, it may be desirable to treat cooperative education strictly as a departmental responsibility.

However, such a high degree of departmental autonomy in cooperative education has not been successful at other institutions. In the absence of an organizational unit directly responsible for the coordination of cooperative education, there is a tendency for employers to be approached by several departments, each promoting its own students and its own programmes. Almost without exception, those institutions which initially permitted complete departmental control over cooperative education have been obliged to establish a coordinating body.

COMMITTEE FINDINGS

The Task Force accepts the need for a central administrative unit to coordinate the Institute's activities in cooperative education. At the same time, however, the committee feels strongly that

departmental authority over educational questions should be maintained. Any organizational changes resulting from cooperative education therefore must provide the departments with a common administrative arm while preserving faculty jurisdiction in educational matters.

RATE OF IMPLEMENTATION

In considering the rate at which it would be feasible to introduce a programme of cooperative education, B.C.I.T. has two choices:

1. proceed directly to the implementation of an Institute-wide programme;

2. introduce the programme by increments, beginning with an experimental, or pilot project;

We recognize that implementation must be preceded by sufficient time for the necessary planning, organizational, and promotional activities.

Although there is disagreement on this point, many practitioners of cooperative education have found that the programme is most likely to succeed when participation is a mandatory requirement throughout the institution. It must be remembered, on the other hand, that full-scale implementation will be an extremely large undertaking. The task of finding work assignments for all students will itself be a major enterprise. In addition, the Institute will require time to resolve scheduling, labour/management, accreditation, and associated operational problems. In view of these objections, the Task Force is of the opinion that implementation should proceed by degrees.

Similar objections can be raised to the suggestion that B.C.I.T. immediately launch a pilot project. Before such a project can become operational, the necessary administrative work must be completed. Financial systems must be established, for instance, and staffing and physical resources must be allocated. Promotion must be carried out among employers, and firm work assignments must be located. Furthermore, coordination details will have to be worked out with departments and administrators such as the Registrar. The committee considers it unlikely that such a large amount of work could be completed in time to influence B.C.I.T.'s student intake for the coming academic year.

This opinion is consistent with the experience of other institutions. The committee feels that about a year should be devoted to planning and organizing before a cooperative programme gets underway. If we assume that B.C.I.T. will decide to proceed with cooperative education, and that financial, staffing, and physical resources are committed at some point within the next six months, it would be reasonable to expect that a pilot project could be undertaken in the summer of 1979.

COMMITTEE FINDINGS

In the event that B.C.I.T. makes an early commitment to cooperative education, the planning and organizing of the first stage in implementation could be completed by January of 1979. Considering the support that must be secured among employers and faculty, together with the operational details yet to be resolved,

it would be wise to treat the first few years of operation as a pilot project. During this period, student participation therefore must be kept within manageable limits. The programme might well expand from a start in one or two technologies. Depending on the success of a pilot project, enrolment might rise from 120 students to 1000 students over a five-year period.*

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* These figures are neither predictions of what might happen nor guidelines to be accepted by the Institute. They are given here only as an example of the objectives which might be pursued, if they are found suitable.

RESOURCE REQUIREMENTS

The nature and cost of the resources necessary to implement a cooperative education programme have a direct bearing on its practicality. Consequently, this section of the report provides an overview of cooperative education requirements. We would like to emphasize the point that this summary should not be construed as an attempt to provide the detailed estimates that would be appropriate in an operational plan. It would be premature of the committee to offer such estimates while the future of cooperative education at B.C.I.T. remains to be settled.

PERSONNEL RESOURCES

The introduction of cooperative education will require additional teaching faculty, a number of full-time coordinators, clerical assistance, and administrative staff. Included in our estimates are the cost of items such as the contributions made by the Executive Director and the Registrar. As participation in the programme increases, clerical and administrative costs may be spread over a larger number of instructors and coordinators.

PHYSICAL PLANT

The committee assumes that B.C.I.T. will want to make provision for adequate office space, facilities, and supplies. An estimate of the costs involved is given in Table 4.

Because cooperative education students spend as much as half their time off campus, the introduction of cooperative education can be expected to reduce the pressure on classroom and other plant facilities.

TABLE 4

A SUMMARY OF ESTIMATED FIVE-YEAR COOPERATIVE EDUCATION BUDGET

BUDGET CATEGORY	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5
Number of Coop Students	120	280	650	1000	1000
Direct Costs:					
1) Personnel	$117,600	$230,200	$396,300	$558,900	$586,800
2) Travel	$ 8,100	$ 11,500	$ 21,300	$ 27,500	$ 15,000
3) Office	$ 7,000	$ 7,000	$ 12,000	$ 13,000	$ 7,000
4) Promotional	$ 4,500	$ 5,000	$ 7,000	$ 7,000	$ 5,000
Total Direct Costs	$137,200	$253,700	$436,600	$606,400	$613,800
Indirect Costs (Support Services)	$ 10,976	$ 20,300	$ 35,000	$ 48,500	$ 30,700
Total Direct and Indirect	$148,176	$274,000	$471,600	$654,900	$644,500
Additional Cost per Student	$ 1,235	$ 980	$ 725	$ 655	$ 645

FINANCIAL REQUIREMENTS

A prediction of the budget required to introduce cooperative education at B.C.I.T. is given in Table 4. These estimates are based on the assumptions that the programme will be implemented by steps; that it will utilize the alternating mode of cooperative education; and that participation will rise from 120 to 1000 students over the first five years.

Although the figures should be treated as no more than rough estimates, it is safe to say in general terms that the cost per participating student will drop as enrolment increases. This trend can be expected because:

1. start-up costs -- e.g., promotion, labour/management negotiations, and so on -- will exceed those occurring in a mature programme;

2. as the programme matures, each coordinator will be able to serve a greater number of students;

3. with participation by a larger number of departments, there will be greater efficiency in course sequencing.

It is the committee's estimate that the additional cost per student will remain at between $600 and $700 (in today's dollars), even if the programme expands to more than 1000 students.

COST/BENEFIT COMPARISONS

A thorough cost/benefit analysis is presently beyond the financial and time constraints of T.F.C.E. However, we can offer several highly generalized comments of relevance to this question.

Even if cooperative education were to offer B.C.I.T. no financial benefits at all, once in operation the programme would cost the Institute annually an additional $600-$700 per student. This is not an excessive sum when compared with the $6000-$7000 being spent yearly on each student presently enrolled.

Furthermore, cooperative education will offer B.C.I.T. the chance to recover some of the programme costs by:

1. adjusting tuition fees;

2. increasing admissions in some technologies to make use of the classrooms and other facilities released for use by off-campus students;*

3. adding new technologies to utilize facilities vacated by off-campus students.

On balance, it is conceivable that B.C.I.T. will be able to serve more students without a proportional increase in cost to the taxpayer.

The largest financial gains are to be made by increasing the number of students who are able to make use of Institute facilities. Assuming that the day school facilities presently are fully committed, the enrolment of an additional 1000 regular students might require a capital expenditure of over $4 million

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* Private schools have been known to raise their profit margins by using cooperative education programmes to increase enrolment, irrespective of the labour market demand for graduates. If most technologies at B.C.I.T. are capable of meeting employers' demands for requirements, then it would seem reasonable for cooperative education to concentrate on new technologies for which the demand presently is not being met.

and an additional maintenance budget. In financial terms, cooperative education would appear to be one means of permitting an increase in enrolment.

FEDERAL GOVERNMENT ASSISTANCE

To date, the Task Force has made no attempt to solicit financial support from either the Federal or Provincial Government. However, several documents stating the Federal Government's interest in cooperative education have been collected by T.F.C.E. Appendix L is a copy of an address by the Honourable Bud Cullen, Minister of Employment and Immigration, to the Canadian Association for Cooperative Education. In his speech, the Minister announced:

> "In order to encourage the growth of this (cooperative) mode of education, my Commission has initiated a program which offers assistance to provinces in a way that respects the division of responsibilities between manpower and education. In essence we are making available to the provinces half the non-academic costs of approved cooperative education and work experience projects during their first year of operation. We will pay expenses incurred in establishing a coordination office, in developing cooperative employment opportunities and other similar administrative costs. We will contribute up to $100,000 per project toward these start-up costs. I hope that this funding -- a start -- will give impetus to the gradual growth of such programs and provide incentives for experimentation and innovation in this area."

A description of the federal programme, together with guidelines for making application for financial support, is given in Appendix M. This document is a copy of an internal memorandum, made available to us by Mr. Rumohr, Youth Coordinator in the Pacific Regional Office of the Canada Employment and Immigration Commission.

Through the Provincial Government, financial assistance from Ottawa will be available to reduce the start-up costs of cooperative education.

Although one cannot always extrapolate reliably from non-Canadian sources, it is interesting to observe that federal spending on cooperative education in the United States has risen from roughly $1½ million to over $12 million annually between 1970 and 1977 (see Appendix N).

CONCLUSIONS AND RECOMMENDATIONS

Assuming that the administrative and governing bodies of the Institute decide to proceed with cooperative education, the Task Force can see no reason why such a programme should not be practical at B.C.I.T. Sufficient support can be found among students, employers, and faculty to justify proposing a limited pilot project, and interest is expected to grow as the programme matures. With some modifications in course sequencing and in admission and graduation dates, the alternating mode of cooperative education can be adopted without serious scheduling difficulties. Student supervision overcomes objections to the question of granting B.C.I.T. recognition for work experience satisfactorily completed off campus. To implement cooperative education, B.C.I.T. will need to modify the job descriptions, workloads, and vacation periods of some faculty members. Coordination of the programme will be necessary, without impinging on departmental jurisdiction in educational matters. A six-month period will be required to plan and organize the project. This may be followed by a pilot project and a gradual rise in student participation. Expenditures are expected to be acceptable when compared with those of the regular day-school operation, and net reductions in the cost per student appear to be achievable. On these grounds, the Task Force regards cooperative education as a feasible undertaking at B.C.I.T.

PRIMARY RECOMMENDATIONS

The foregoing inquiry brings T.F.C.E. to its major recommendations:

1. that B.C.I.T. commit itself to the philosophy of cooperative education and proceed towards adoption in stages through a pilot project. The project should begin with two, possibly three, technologies in the summer of 1979. As a general guideline, it should involve at most 120 students, and expand to at most 1000 students in several technologies by 1983.

In order that the necessary planning, organizational, and promotional work can be completed prior to commencement of the project, the committee recommends:

2. that the administrative and governing bodies of B.C.I.T. accept this report as a basis for further development of cooperative education, and express their support in writing.

SECONDARY RECOMMENDATIONS

We have previously stressed the importance of assessing employer support for cooperative education. Although employer reactions have been explored on an informal basis, further documentation is required. The Task Force therefore recommends:

3. that B.C.I.T. survey employer needs, attitudes, and support, through T.F.C.E. (see Appendix O).

The offering of cooperative education by any institution gives rise to certain unique administrative and financial considerations. The Board of Governors of the Institution, the principal, directors, and heads of departments offering cooperative education programs must

give full support to these programs if they are to be successful. An internal public relations programme, directed toward an understanding of the role of cooperative education in the institution and in the community at large, is essential to the success of cooperative education. It is therefore essential that cooperative programmes be administratively supported in the beginning by a staff position in the Technical Education line. This position would ensure appropriate services (admissions, timetabling, computer center, and so on) to meet the needs of cooperative education and provide a focus for information and experience in cooperative education. The individual involved would administer resources in support of the work done by cooperative coordinators.

To provide for coordination of the programme, while maintaining departmental control over educational matters, the committee recommends:

4. a) that the decision to commit a programme to cooperative education be based upon the recommendation of the technology in question;

b) that B.C.I.T. allocate resources to administer and coordinate the work terms implicit in a cooperative programme in a way that educational decision-making originates in the department. It is recommended that the resources supporting the operation of the work terms be organized and coordinated through a staff position;

c) that technologies wishing to adopt cooperative programmes be encouraged and assisted in evolving their own time and course sequence plans, using the resources of T.F.C.E.;

d) that the individuals coordinating work terms be called "coordinators". A coordinator should be a member of the teaching department(s), and his workload and job description be established by the collective agreement and/or by the Labour Management Committee.

In approaching the question of workloads, the committee recommends:

5. a) that during the initial development stages, the number of cooperative education students per coordinator should be low. This number can be increased as the programme matures, and should depend on the nature of the technology, availability of jobs, and so on;

b) that an initial ratio of sixty cooperative students per coordinator (an intake of sixty students) be considered for the purpose of cost analysis. The actual initial ratio will have to be set, technology by technology, through labour management negotiation.

With regards to student accreditation, the Task Force recommends:

6. that the work-term of a student in cooperative programmes be evaluated, and a satisfactory completion of work-terms be stated as a requirement for the completion of that programme. Furthermore, a statement indicating that the student has satisfactorily completed the required number of work terms should appear on every cooperative student's transcript.

Finally, since the work in this report is based primarily on an investigation into the alternate mode of cooperative education, and because this mode appears to be the most suitable, the committee recommends:

7. that B.C.I.T. pursue the "Alternate Cooperative Education (ACE) Programme" as a possible model for use in some of its technologies while leaving the "Parallel Programme" as an option for consideration.

FUTURE WORK OF THE TASK FORCE

If B.C.I.T. should decide to proceed with cooperative education, it would seem reasonable to suggest that T.F.C.E. (and in particular, Dr. Parikh) continue to serve as an administrative and information focus for the programme, at least until such time as a permanent coordinating body can be established. The committee therefore should continue to disseminate information about cooperative education; to consult with those instructors who wish to take part in the programme; and to advise the Administration on cooperative education matters. T.F.C.E. would also appear to be a suitable vehicle to coordinate the planning and organizing of the initial stages of programme implementation. Essentially, the committee would be responsible for coordinating the introduction of cooperative education at B.C.I.T.

This definition of the committee's role is consistent with several of the recommendations made in the report, with the ongoing work of the committee, and with T.F.C.E.'s existing major concerns. The committee's recommendations commit T.F.C.E. to a survey of employer interest in cooperative education, and to the guidance of those technologies who wish to participate in the programme. Appendix P provides an account of the activities

and work flow processes in which the committee is presently engaged. Among these activities, T.F.C.E. will concentrate on the following:

1. a more intensive survey of student responses to cooperative education (see Appendix Q).

2. an inquiry into the feasibility of adopting the parallel mode;

3. a review of the possibility that selected technologies might evolve a mode which utilizes a single summer work term; at present it would appear difficult to finance such a mode;

4. an investigation into the scheduling difficulties arising from the necessity to graduate students in resource technologies during May, so that they are available for the summer work season;

5. a response to the objection that Institute policy prohibits extending a student's tenure at B.C.I.T. beyond 24 months;

6. an examination of the procedures to be followed in cases where a technology decides to engage some sets in cooperative education, but not others;

7. assistance to individual departments in preparing proposals for pilot projects beginning in September, 1979 or September, 1980.

8. preparation, for the Technological Education Committee, of a proposal for funding by the Ministry of Education for technologies proposing a pilot project for September 1, 1979 and/or September, 1980.

APPENDIX A

MODES OF OPERATING COOPERATIVE PROGRAMS

Dr. V.M. Parikh
1977-10-13

1. Alternating Mode

As the name suggests, in this mode students alternate periods of full-time school with periods of full-time work of approximately equal duration. In this mode, employment is generally paid, and a student often will return to a cooperative employer on successive terms.

This is the most frequently used mode of operation. The major programme objective is generally student career development. In some cases, institutions have avoided the problem of increasing students' total number of training years by raising admission standards from high school diploma to one or two year college (or university) pre-planned programme.

An alternating mode requires the student body to be divided into two groups. While one group is working on a cooperative assignment, the second is in school. This system guarantees an employer continuous job coverage, provided there is a sufficient number of students in both groups. Thus, an alternating programme should not be optional, and continuation of a student in this programme should be based on his careful evaluation and satisfactory performance during both study and work terms. Student evaluation criteria and procedures must be evolved in full consultation with employers. Students must be fully informed of these procedures, and given with a warning that failure to meet these criteria could result in their being removed from the total programme.

In this mode, it is often necessary to operate the school on a twelve-month basis, and to offer some courses twice within a given academic year. This will enable both groups of students to take each course. The problem of duplicating the entire programme is solved by either cycling some courses or/and partially blocking courses. The additional cost of offering some courses twice is often met by hiring part-time help (e.g., during summer months) and by charging normal tution fees for the work terms. (This is a very common practice, and is justified because of the additional costs involved in duplication of courses and in extra faculty time required for preparing students for work assignments, finding student-placements, student evaluations, etc.) In this mode, it is necessary to assure students that their required courses will be offered in the proper sequence.

2. Field Mode

In this mode, students leave the campus for short duration work-assignment as a group once a year in a given academic year. Employment may be paid or voluntary, but more frequently than for any other mode, voluntary jobs are used. These are fully supervised by teaching faculty; credits, if awarded, are also assigned by the teaching faculty. Programme objectives may be career development or personal development.

This mode is less desirable because it cannot secure paid employment. Consequently, students must have some other means of financial support during their field period. Since students work for one period only, jobs are often less challenging and offer less responsibility. This results in inadequate learning opportunities. Employers do not get the opportunity (as they do with the alternating mode) to assess and attract students for full-time, after-graduation employment. Employers may see en-block arrival and departure of students as expensive interruptions in their production activities.

On the other hand, in some highly seasonal technologies, employers may welcome assured availability of a group of students for a short period. This may occur, for example, during fish-spawning period for fishries students, during summer for construction technology students and hospitality technology students, and during Christmas for students in marketing, business management, and retailing.

3. Parallel Mode

Participating students in this mode attend classes during one segment of the day and work part-time during another segment of the same day. Jobs are local and paid. In some cases, programmes are evolved and arranged to meet the specific needs of a local large industry. The programme objective almost is always career development.

4. Extended-Day Mode

This is similar to our night-school programme. Students work part- or full-time during the day and attend school on a part-time basis during the evening hours. This mode attracts an older student, who is interested in additional education for upward mobility and self-development. In a stricter sense, this mode is not regarded as cooperative education because the institution's traditional responsibility for finding appropriate work assignments is often missing.

APPENDIX B

Is Cooperative Education Worth It? One Company's Answer

JACK J. PHILLIPS
Manager,
Training and Development
Stockham Valves and Fittings
Birmingham, Alabama

What an in-depth analysis of a 20-year-old cooperative education program proved to a company and its decision based on that study.

For over twenty years, the Lockheed-Georgia Company has sustained a Cooperative Education Program in which more than 400 engineering, science and business students from sixteen different colleges alternated work and study. During the past two decades both the company and the program experienced numerous ups and downs. At one time, for example, the company was the largest employer of co-ops in the Southeast; yet, from 1970 to 1972 co-op recruitment was suspended altogether and at present the program continues in operation at a low key.

Until recently, there had been no broad-based analysis of the effectiveness of the co-op program although it was generally assumed that benefits outweighed the cost. One major assumption behind that conclusion was that co-op graduates succeeded to a greater degree in the company than did non-co-op graduates.

This article reports on a major study that examined and evaluated the co-op program utilizing an approach that seems to be suitable for evaluating the performance of any joint industry-university program. It is a method for analyzing past activity, compares the performance of the graduates of the program with a control group, calculates the various costs associated with the program's operation, and itemizes the benefits derived from the company's participation in the program.

Strategy

The primary objective of the Cooperative Education Program has been to provide a continuous supply of professional personnel in a timely manner. In analyzing the performance of the program toward accomplishment of this objective, the following questions were relevant:

1. Has the planning and programming of trainees been in step with long-range company planning?
2. Is there some pattern in completion rate and retention rate with certain schools, majors, grades or other characteristics?
3. What are the reasons for some co-ops not completing the program?
4. Why did some fail to return after completing the program?
5. Is the performance of a co-op graduate in the company better than a non-co-op graduate?
6. How much does it cost to train a co-op student?
7. What benefits is the company deriving from the program?

These questions, along with many other related ones, were answered by the study.

Appropriate information was gathered from the files to conduct the analysis. The co-op trainees included in the analysis were those who entered the program and subsequently withdrew or completed by June 30, 1973.

Planning and Programming of Trainees

From 1952 to 1973, there have been 428 co-op trainees in the program. Two hundred and seventy-one (64%) of these completed the program, while 157 withdrew for various reasons before they received their degree. Of those that completed, 95 (35%) returned for permanent professional

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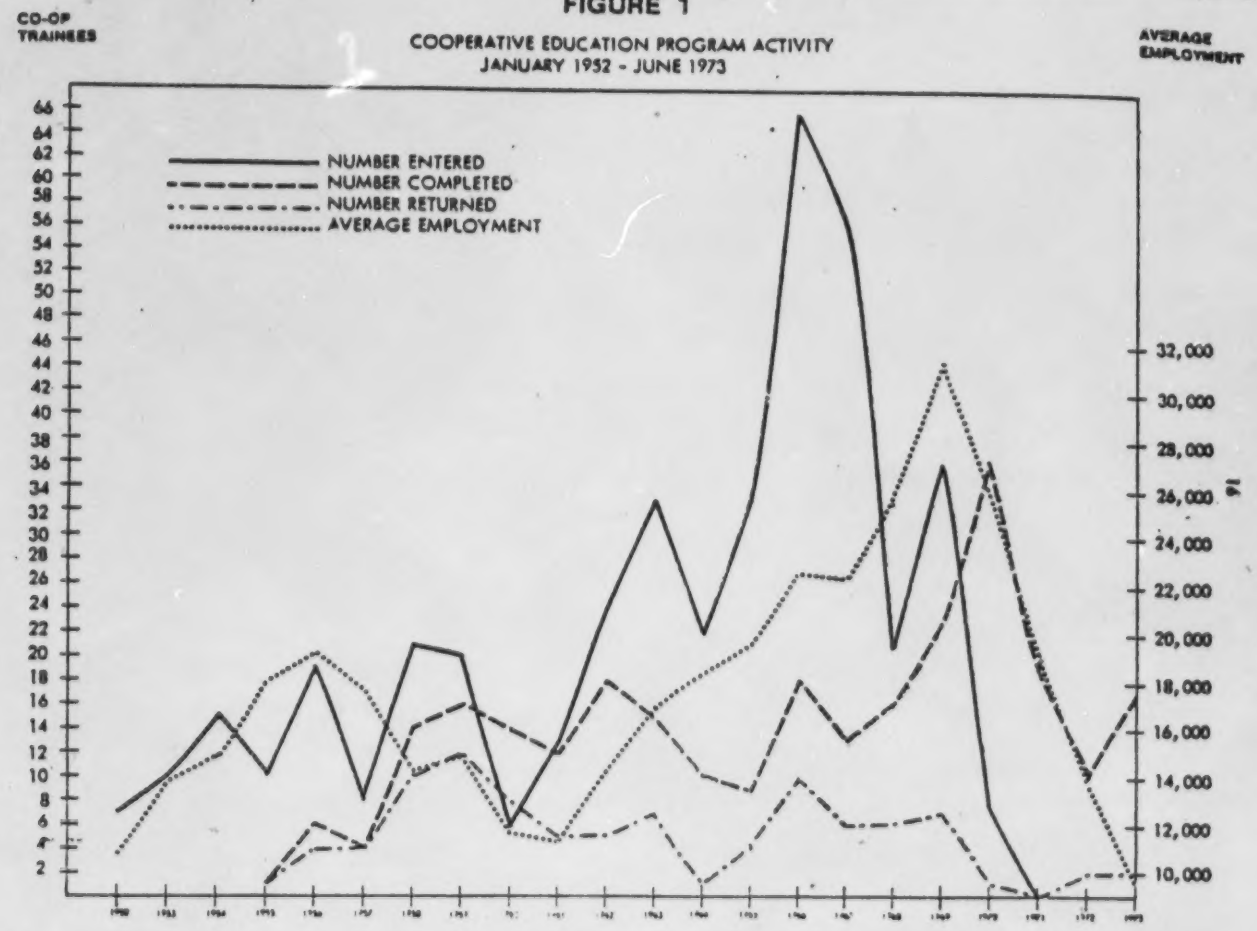
FIGURE 1



employment shortly after completion of their degree.

An important aspect of the program is the recruitment of enough co-op trainees each year to have a continuous flow of available graduates to meet company needs three to five years from the date of hire. Figure 1 shows the number of co-op trainees that entered and completed the program as well as those that returned for permanent employment each year since 1952. The average total employment of the company is also shown for each year. From the graph, it is apparent that the timing of the program has been off occasionally during its 21 years of operation.

Major Findings

There are several significant conclusions drawn from this study. These are summarized below. All these conclusions were a result of statistical tests performed on the data. The completion rate refers to the percentage of students that complete the program. The retention rate refers to the percentage of graduates that return for permanent employment.

1. There *is not* a relationship between the completion rate of co-ops and the school that they attended.
2. There *is* a relationship between the retention rate and the school that they attended. The closer the school to the employer, the greater the chance of returning for permanent employment.
3. There *is not* a relationship between the completion rate and the academic major pursued by the student.
5. There *is* a relationship between the grade point average and the completion rate.
6. There *is not* a relationship between the retention rate and the grade point average.
7. Co-op trainees who returned to the company for permanent work received promotions and pay increases at a faster pace than non-co-op graduates with a control group of non-co-op graduates.
8. There is no difference in the rate of terminations of co-op graduates and the rate of terminations of non-co-op graduates.
9. The average cost to train each co-op that returned to the company for permanent employment is approximately $23,100.00.

These findings, supported by satistical evidence, validated some of the assumptions that management had made during the past few years.

Cooperative Education Benefits

An important part of the study tabulated the benefits derived from the cooperative education program. These benefits were substantiated by the analysis or through extensive interviews with students, company officials, school officials and supervisors of co-op trainees and graduates.

1. The program has been an excellent source of permanent professional manpower. A significant number of co-ops have returned for permanent employment after completion

of their degrees. Those that have returned, based on this study, seemed to be better employees. They are well-trained and have exposure to the company that no other employees are able to get. When they return they adapt to the new job much faster, appear to progress faster and appear to be more valuable to the company than the non-co-op graduates.

2. The program has also been an excellent source of temporary manpower to handle peak work loads in various departments. Many departments have requested several co-ops to handle short-range, semi-professional peak work loads and special projects. This eliminated the necessity of hiring permanent employees for short periods of time or transferring other employees into that department.

Many departments requested several co-ops to handle short-range, semi-professional peak work loads.

3. Co-op trainees have been used to relieve higher paid personnel of relatively minor tasks required in any organization. These higher paid employees then could devote their energies to tasks more commensurate with their skills and salaries. The co-op trainees can usually perform these routine minor tasks with greater efficiency than the other employees, since they do not have time to get bored with the job sufficiently to cause a degradation of their performance.
4. The infusion of bright, young people from an educational environment can provide many ideas and viewpoints which can be refreshing and stimulating. Some supervisors indicated that the students have actually motivated them to better job performance and at times have caused them to look at their decisions from different viewpoints.
5. The program has been an effective recruiting tool for non-cooperative students on the college campuses. As co-op trainees return to the campus they relate their experiences to their fellow classmates and leave a favorable impression. Many of their school reports and projects have centered around their work experience. This has maintained the exposure of the company to other students. This made it easier for our campus recruiters to reach graduates from the various campuses.
6. The program provides a screening process for high potential professional and technical employees. The company has the opportunity to evaluate the prospective permanent employee for three or four years before making a firm commitment on his permanent employment.
7. A mutual industry-university relationship is enhanced through the cooperative education program. In some cases the strong relationship has paved the way for other joint projects of mutual interest
8. Most companies feel obligated to financially assist universities and their students. The co-op program is a medium by which Lockheed has given financial aid to deserving students, yet the company receives a large amount of work for the money. Many intelligent and promising students, who otherwise couldn't afford to go to college, have received their degrees through the cooperative education program.
9. Industries, such as Lockheed, have a social obligation to expose students to the world of work. With the company's modern manufacturing facilities and laboratories, the student is exposed to equipment and processes that could never be duplicated on campus. The student learns to work and deal with many types and groups of people—from the assembly line workers to salesmen.
10. The cooperative education program has been and can be a significant tool in selecting minority students at a formative level and training and developing them into productive and professional career employees.

Recommendations

Of the three possible recommendations—continue the program unchanged, phase it out, or modify it—the best alternative was to make certain changes in the program to reduce costs and increase effectiveness. These recommended changes were:

1. The program should be continued only at those schools that have good retention rates, with one exception. A predominantly black school was included because the company's commitment to minority employee development. (This will give a core of six schools in the program which should result in an improved retention rate.)
2. Only sophomores and juniors should be recruited for the program. This will help to eliminate many of the withdrawals caused by a change of school or major. Although this would possibly cut down the time that a co-op trainee spends with the company, it should be enough exposure for the student to make a decision on career employment.
3. The co-op coordinator should work with the participating schools in an effort to reduce, where practicable, the length of time a co-op trainee spends in school just prior to graduation. A reduction in this time should increase the retention rate considerably. The company would be in a better position to extend a permanent offer and thus retain a larger percentage. For instance, a beginning junior could enter the program and alternate work and school periods until the last quarter before graduation. On this schedule, he would have six work quarters, which is an ample number to complete the program.
4. The minimum standard on the grade point average should be raised from 2.5 to 2.8 on a 4.0 maximum scale. This would help reduce the withdrawals caused by poor grades. Lockheed has an attractive program with excellent pay and fringe benefits and raising the standard should not affect recruiting.
5. Each year's recruiting should be planned around the company's manpower requirements three years in the future. Direct coordination with the long-range planning group at Lockheed is essential. It is recommended that the planning be centered around the 80% likely employment level forecast three years from the recruiting period.

Lockheed-Georgia accepted the recommendations and is in the process of implementing them. The initial effects have been positive and the program appears to be improved. PJ

VOLUME 12, NUMBER 10, NOVEMBER 9, 1977 BCIT STUDENT PUBLICATIONS

Co-op Education considered for BCIT

By DR. PAUL PARIKH

A Royal Commission on post-secondary education in BC named BCIT "The Flagship of Technological Education" in a study published in 1976. Such a recognition of our Institute is, no doubt, due to the tremendous reputation established by our graduates in serving the needs of our industries and local agencies. In fact, the objective of our very existence is to meet the needs of industry.

BCIT is now considering the possibilities of meeting such needs even more effectively. An excitingly new educational concept, one known as "Cooperative Education," is being explored.

This is an educational plan in which students alternate periods of full-time study with periods of full-time (usually paid) employment. The program differs considerably from summer employment. The student acquires on-the-job experience in his field through a carefully planned and supervised training program during two to three work periods of his training. Paid employment assignments are diversified and provide the student with a variety of job experiences with increasing challenge and responsibility as he progresses through the program. On-the-job training is considered a vital element in the education process.

Dr. Paul Parikh, who has recently joined BCIT as a Consultant in Educational Planning and Cooperative Education, brings to BCIT a varied educational background and a wealth of experiences from university teaching here in B.C. and abroad. He comes from Notre Dame University of Nelson, where he was a professor of chemistry and the head of the Department of Physical Sciences. Prior to joining NDU in 1965, he taught at Queen's University in Kingston, Ontario, and at Universities of Bombay and Poona in India. He completed his undergraduate studies at Poona and his doctorate studies at Queen's.

In a typical Cooperative Educational program, on-the-job experience usually starts after the first or second academic term at the institution. During this initial period the student is not only trained in the fundamental principles in his field of study but also assisted in finding an employment with an employer who has agreed to provide on-the-job training.

During the second term the student is employed full-time but is also enrolled at the institute who continues to send faculty members to the student's work site for consultation, advice and evaluation.

At the end of each work term the student, as well as the employer, submits reports to the department. These reports form the basis for assigning student's credits for the work term. This work term is followed by another academic term on the campus after which the student may return to the same or a different employer to assume diversified experience and increased responsibility. This alternation of academic and work terms continues until the student completes all his academic require-

APPENDIX C

ments for graduation.

Cooperative Education is relevant, it is innovative, and it is student oriented, not only through its built-in financial aid feature, but through its individualization of the educational process as a whole. Few other, if any, types of higher education in the world can make those claims.

Apart from the obvious educational and financial benefits, students gain considerably through the following features of Cooperative Education:

Provides the student with exposure to a possible full-time employer;

Real learning is achieved in classroom as well as on-the-job environments;

Offers students an early opportunity to decide on a career;

Facilitates a study-work intermingling for life-long learning;

Enables the development of critical social skills in a work setting;

Sensitizes students to academic performance and completing academic training;

Supplements financial needs;

Instills conceptional and attitudinal skill, critical to successful job performance;

Opens doors to student contacts with the "practitioner" in the field;

New and latest professional techniques are readily acquired;

Accentuates the importance of assuming responsibility;

Lets students realize the importance of interpersonal relationships;

Aids the adjustment to work and the achievement of higher-level needs;

Inculcates professional spirit;

Demonstrates the importance of formal education to work performance.

These points aptly - describe Cooperative Educaiton as an aid to students' future professions. Just put together the first letter of each of the points stated above and see what acronym you get--PROFESSIONAL AID!

APPENDIX D

Submitted by: Date: _____

TFCE - DATA FORM - 1

1. Technology: _____
2. Department: _____
3. Name of the specific coop. programme: _____
4. Year since the programme is operational: _____
5. Approx. number of businesses/industries/govt. departments participating in this programme: _____
6. Approx. no. of students participating in this programme each year: _____
7. Students gain work experience during
   (a) Summer (b) Academic year _____
8. Are students paid for this work (a) yes (b) no _____
9. If yes, by whom: (a) entirely by B.C.I.T. _____
   (b) entirely by industry _____
   (c) jointly by B.C.I.T. and industry _____
   (d) by other agency (name) _____
10. Has student's classroom work affected in any way by this programme: (a) yes (b) no _____
11. If yes, in what way (describe) _____
12. Has the course curriculum been revised since coop programme started?
    (a) yes (b) no _____
13. If yes, when and how often? _____
14. Comments on your experience with this coop programme.

APPENDIX E

WORK-EXPERIENCE PROGRAMS AT BCIT

A REPORT AND RECOMMENDATIONS BY DR. V.M. PARIKH TO TASK FORCE ON COOPERATIVE EDUCATION

1977.10.13

I. Work-Experience Statistical Data

	BUSINESS	ENGINEERING	HEALTH	TOTAL BCI
1. No. of students	1263	1574	830	3667
2. No. of departments	7	10	6	25
3. Depts. not reporting	1	3	0	4
4. Depts. with work-experience requirements in Curriculum	3	4	6	15
5. Depts. requiring 3 months or more work experience	1	1	5	10
6. Depts. requiring parallel work-experience of more than 3 weeks but less than 3 months	0	0	2	2
7. Depts. requiring less than 3 weeks parallel work-experience	2	3	1	5
8. Departments in which students take paid positions	1	1	3	5
9. Departments exercising the responsibility of finding positions for work-experience	2 (unpaid)	3 (unpaid)	3 (paid) 5 (unpaid)	13
10. Number of students in required work-experience programs	178	131	830	1139
11. Percentage of students involved in work experience programs	14%	8%	100%	31%
12. No. of business (etc.) organizations involved in work-experience programs	113	124	50	287

CONCLUSIONS

1. HEALTH DIVISION

(a) On-the-job training is a required experience in all departments and for all the students in health division.* This being the standard practice prescribed by respective national associations, the mode and duration of work-experience varies from department to department according to the requirements of national associations.

(b) Most, if not all, students in health division gain their work-experience in relatively few, non-profit making organizations such as hospitals and government departments. Consequently, traditions of training procedures, supervision responsibilities, evaluations, payment or nonpayment of student trainees have evolved between BCIT departments and the organizations giving work-experience. I therefore suggest that except for one department (in which some flexibility in this matter exists) in health division, a statusquo be maintained for next two years with regards to the introduction of true cooperative program.

(c) Attempts be made during these two years to contact various national associations and the Ministry of Health to impress upon them the benefits of true cooperative training and thus to bring about gradual changes in the established work-experience traditions.

(d) A report on the possibilities of introducing pilot program in '78 in one unnamed department of health division will be submitted at a later date.

2. Business Division

(a) Only 3 out of 7 departments, involving a total of only 14% students in business division require (or actively encourage) some degree of work-experience for their students.

(b) Of these, only one department encourages and helps its students to take regular summer employment in related industry and formally evaluates student's on-the-job performance. While this department would appear to be ready for the pilot project, the nature of its technology is highly seasonal and does not lend itself to be a representative experimentation of cooperative training.

(c) Two other departments attempt business familiarization for their students by encouraging them to seek business projects during fourth term. However, true cooperative program could serve better both academic as well as non-academic goals of these students.

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* This statement is correct, if work experience after graduation, but prior to certification, is included.

Business Division (Cont'd)

(d) I suggest that one of these two departments be encouraged to participate in pilot project '78. Others be advised to work actively, during summer of '78, towards the inauguration of a cooperative training program for the incoming students in September 1979.

3. Engineering Division

(a) While engineering departments have been at the forefront of cooperative education in over a thousand educational institutions in U.S. and Canada, the work-experience component in the training program of BCIT engineering students is sadly lacking.

(b) Only about 8 percent of our engineering students are presently required (or encouraged) to obtain work-experience during their training. On an average, this training is of 2 weeks duration and is treated as a practicum with some academic goals. Only one department attempted to institute a summer work-experience program but is facing financial and manpower difficulties.

(c) In view of the fact that our engineering division has largest enrollment (43%) and has largest number of departments (10) at least two engineering departments should attempt to participate in the pilot project '78.

(d) There is some degree of enthusiasm for cooperative education in engineering departments, however, existing work load for faculty members appears to be a limiting factor in their participation in planning and organizing cooperative pilot projects. If this be truly so, possibilities of partially relieving some senior faculty members (to the tune of 2 to 3 hrs. per week) for cooperative planning should be considered. This could perhaps be by appointing additional help (e.g. markers, administrative assistants, etc.) in one or two departments. Alternately, those departments of the core division that are heavily involved in teaching engineering students, should be asked to provide additional help either in teaching, planning or completely evolving a pilot project.

In any case, a pilot project in cooperative education, without active participation of the largest division at BCIT would not be truly representative.

APPENDIX F

TFCE - DATA FORM - 2

1971-10-04

○ My department is interested in participating in a pilot project ('78) for cooperative education for option

_____

○ My department is not in a position to participate in cooperative education pilot project.

○ My department is interested but would like further information and discussions with you.

○ Present work-experience arrangement in my department is ideal and does not lend itself to a cooperative educational project.

Department:_____ Division:_____

Submitted by:_____ Date:_____

APPENDIX G

TFCE - DATA FORM - 3 - FACULTY
1977-10-20

In answering the following, please consider all types of educational work-experiences whether they have been called field-experiences, internships, practicums, clinical experiences, sandwich program, cooperative program or anything else. Please check the responses which most clearly match your thinking, and add any comments or suggestions in the given space.

Please return this form to my mail slot (or ask your division secretary to return it) as soon as possible.

1. My awareness of types of field-experience learning is:

   a.___Extensive; b.___Moderate; c.___Minimal; d.___Non-existent

2. My interest in having field experiences as educational options is:

   a.___Extensive; b.___Moderate; c.___Minimal; d.___Non-existent

3. I believe that the percentage of students gaining work-experience as a part of their program at B.C.I.T. is:

   a.___High (>75%); b.___Moderate (40 - 75%); c.___Minimal (15 - 40%); d.___Non-existent (<15%)

4. In my opinion, the need for work-experiences as a part of their B.C.I.T. programs, for the kinds of students with whom I work is:

   a.___High; b.___Moderate; c.___Minimal; d ___Non-existent

5. I believe that the percentage of my students with program related job-experience background is:

   a.___High (>75%); b.___Moderate (40 - 75%); c.___Minimal (15 - 40%); d.___Non-existent (<15%)

6. If some type of work-experience is/were available to your students, which response most clearly reflects your situation?

   a.___ I am already involved. b.___ I would like to be involved as_____ c.___I would rather not be involved because_____

   _____

7. Comments: (Please use more space at the back)

   _____

   _____

   _____

Name:_____ Local_____

Department:_____ Division:_____

BCIT TASK FORCE FOR COOPERATIVE EDUCATION
CAMPUS/JOB DISTRIBUTION OF STUDENTS - UNEQUAL TERMS - PLAN 1: - FALL ADMISSIONS ONLY

	Yr-1(78-79)				Yr-2(79-80)				(steady state reached) Yr-3(80-81)				Yr-4(81-82)			
TERM	F	W	Sp	Su	F	W	Sp	Su	F	W	Sp	Su	F	W	Sp	Su
DATES	Sep.5 to Dec.16	Jan.2 to Mar.10	Mar.20 to May 26	Jun.12 to Aug.20	Sep.5 to Dec.16	Jan.2 to Mar.10	Mar.20 to May 26	Jun.12 to Aug.20	Sep.5 to Dec.16	Jan.2 to Mar.10	Mar.20 to May 26	Jun.12 to Aug.20	Sep.5 to Dec.16	Jan.2 to Mar.10	Mar.20 to May 26	Jun.12 to Aug.20
NO. OF WEEKS	15	10	10	10**	15	10	10	10**	15	10	10	10**	15	10	10	10**
GRP. A(20)	C	J	C	J	C	C	J	C	C--Graduation; Total weeks: - C,75; J, 30-34							
GRP. B(20)	C	C	J	C	J	C	C	J	C--Graduation; Total weeks: - C,70; J, 35-37							
GRP. C(20)	-	-	-	-	C	J	C	J	C	C	J	C	C--Graduation as GRP.A			
GRP. D(20)	-	-	-	-	C	C	J	C	J	C	C	J	C--Graduation as GRP.B			
GRP. E(20)	-	-	-	-	-	-	-	-	C	J	C	J	C	C	J	C
GRP. F(20)	-	-	-	-	-	-	-	-	C	C	J	C	J	C	C	J
GRP. G(20)	-	-	-	-	-	-	-	-	-	-	-	-	C	J	C	J
GRP. H(20)	-	-	-	-	-	-	-	-	-	-	-	-	C	C	J	C
STDS.1st yr.	40	20	20	20	40	20	20	20	40	20	20	20	40	20	20	20
ON 2nd yr.	40*	40*	40*	--	20	40	20	20	20	40	20	20	20	40	20	20
CAM. 3rd yr.	--	--	--	--	--	--	--	--	40	--	--	--	40	--	--	--
TOTAL	80	60	60	20	60	60	40	40	100	60	40	40	100	60	40	40
STDS.1st yr. ON	0	20	20	20	0	20	20	20	0	20	20	20	0	20	20	20
JOBS 2nd yr.	0	0	0	0	20	0	20	20	20	0	20	20	20	0	20	20
TAL	0	20	20	20	20	20	40	40	20	20	40	40	20	20	40	40
GRADUATES TO JOB MARKET	0	J	0	40*	-	-	-	-	-	40	-	-	-	40	-	-

* Non-coop students presently registered in your first year
** Summer term on campus is 10 weeks but on job it could be 10 to 12 weeks; C= On Campus; J = On the Job

BCIT TASK FORCE ON COOPERATIVE EDUCATION

CAMPUS/JOB DISTRIBUTION OF STUDENTS - UNEQUAL TERMS - PLAN 2: SUMMER AND FALL ADMISSIONS

	Yr-1(78-79)				Yr-2(79-80)				Yr-3(80-81) (steady state reached)				Yr-4(81-82)			
TERM	Su	F	W	Sp	Su	F	W	Sp	Su	F	W	Sp	Su	F	W	Sp
DATES	Jul.4 to Sep.9	Sep.12 to Dec.23	Jan.9 to Mar.17	Mar.27 to June 2	Jul.4 to Sep.9	Sep.12 to Dec.23	Jan.9 to Mar.17	Mar.27 to June 2	Jul.4 to Sep.9	Sep.12 to Dec.23	Jan.9 to Mar.17	Mar.27 to June 2	Jul.4 to Sep.9	Sep.12 to Dec.23	Jan.9 to Mar.17	Mar.27 to June 2
NO. OF WEEKS	10	15	10	10	10	15	10	10	10	15	10	10	10	15	10	10
GRP. A(20)	--	C	C	J**	J	C	C	C	J	C--Graduation; Total Weeks: C,75; J 34						
GRP. B(20)	C	C	J	C*	J	C	C	J**	C--Graduation; Total Weeks: C,70-74; J 34							
GRP. C(20)	--	--	--	--	--	C	C	J**	J	C	C	C	J	C--Grad. as GRP. A		
GRP. D(20)	--	--	--	--	C	C	J	C*	J	C	C	J**	C--Grad. as GRP.B			
GRP. E(20)	--	--	--	--	--	--	--	--	--	C	C	J**	J	C	C	C
GRP. F(20)	--	--	--	--	--	--	--	--	C	C	J	C*	J	C	C	J**
GRP. G(20)	--	--	--	--	--	--	--	--	--	--	--	--	--	C	C	J**
GRP. H(20)	--	--	--	--	--	--	--	--	--	--	--	--	C	C	J	C*
STDS.1st yr.	20	40	20	20	20	40	20	20	20	40	20	20	20	40	20	20
ON 2nd yr.	--	40*	40**	40**	--	40	40	20	--	40	40	20	--	40	40	20
CAM. 3rd yr.	--	--	--	--	--	--	--	--	20	20	--	--	20	20	--	--
TOTAL	20	80	60	60	20	80	60	40	40	100	60	40	40	100	60	40
STDS.1st yr.	--	--	20	20	--	--	20	20	--	--	20	20	--	--	20	20
ON JOBS 2nd yr.	--	--	--	--	40	--	--	20	60	--	--	20	60	--	--	20
TOTAL	0	0	20	20	40	0	20	40	60	0	20	40	60	0	20	40
GRADUATES TO JOB MARKET	0	0	0	40***	0	0	0	0	20	20	0	0	20	20	0	0

* Spring term on campus could be 14 weeks; ** On the Job 14 weeks spring term

*** Non-coop students presently registered in your first year

BCIT TASK FORCE ON COOPERATIVE EDUCATION
CAMPUS/JOB DISTRIBUTION OF STUDENTS UNEQUAL TERMS - PLAN 3: SUMMER AND FALL ADMISSIONS

	Yr-1(78-79)				Yr-2(79-80)				Yr-3(80-81) (steady state reached)				Yr-4(81-82)			
TERM	Su	F	W	Sp	Su	F	W	Sp	Su	F	W	Sp	Su	F	W	Sp
DATES	Jul.4 to Sep.9	Sep.12 to Dec.23	Jan.9 to Mar.17	Mar.27 to June 2	Jul.4 to Sep.9	Sep.12 to Dec.23	Jan.9 to Mar.17	Mar.27 to June 2	Jul.4 to Sep.9	Sep.12 to Dec.23	Jan.9 to Mar.17	Mar.27 to June 2	Jul.4 to Sep.9	Sep.12 to Dec.23	Jan.9 to Mar.17	Mar.27 to June 2
NO. OF WEEKS	10	15	10	10	10	15	10	10	10	15	10	10	10	15	10	10
GRP. A(20)	C	C	J	C*	J	J	C	*	C --- Graduation; Total Weeks: C 75, J 34							
GRP. B(20)	--	C	C	J**	J	C	C	C	J --- C--Graduation; Total Weeks: C 75; J 34							
GRP. C(20)	--	--	--	--	C	C	J	C*	J	J	C	C*	C Grad. as GRP B			
GRP. D(20)	--	--	--	--	--	C	C	J**	J	C	C	C	J--Grad. as GRP			
GRP. E(20)	--	--	--	--	--	--	--	--	--	C	C	J**	J	C	C	C
GRP. F(20)	--	--	--	--	--	--	--	--	C	C	J	C*	J	J	C	C*
GRP. G(20)	--	--	--	--	--	--	--	--	--	--	--	--	--	C	C	J**
GRP. H(20)	--	--	--	--	--	--	--	--	--	--	--	--	C	C	J	C*
STDS. ON CAM 1st yr.	20	40	20	20	20	40	20	20	20	40	20	20	20	40	20	20
STDS. ON CAM 2nd yr.	--	40	40	40	--	20	40	40	--	20	40	40	--	20	40	40
STDS. ON CAM 3rd yr.	--	--	--	--	--	--	--	--	20	20	--	--	20	20	--	--
TOTAL	20	80	60	60	20	60	60	60	40	80	60	60	40	80	60	60
STDS. ON JOBS 1st yr.	--	--	20	20	--	--	20	20	--	--	20	20	--	--	20	20
STDS. ON JOBS 2nd yr.	--	--	--	--	40	20	--	--	40	20	--	--	40	20	--	--
STDS. ON JOBS 3rd yr.	--	--	--	--	--	--	--	--	20	--	--	--	20	--	--	--
TOTAL	0	0	20	20	40	20	20	20	60	20	20	20	60	20	20	20
GRADUATES TO JOB MARKET	0	0	0	0	40	0	0	0	0	20	20	0	0	20	20	0

* Spring term on campus to be 14 weeks ** On the job 14 weeks spring term

BCIT TASK FORCE ON COOPERATIVE EDUCATION
CAMPUS/JOB DISTRIBUTION OF STUDENTS - 3 EQUAL TERMS - PLAN 4 - FALL AND WINTER ADMISSIONS

	Yr-1(78-79)			Yr-2(79-80)			(steady state reached) Yr-3(80-81)			Yr-4(81-82)			Yr-5(82-83)		
TERM	F	W	Su	F	W	Su	F	W	Su	F	W	Su	F	W	Su
DATES	Sep.5 to Dec.22	Jan.2 to Apr.21	May 1 to Aug.20	Sep.5 to Dec.22	Jan.2 to Apr.21	May 1 to Aug.20	Sep.5 to Dec.22	Jan.2 to Apr.21	May 1 to Aug.20	Sep.5 to Dec.22	Jan.2 to Apr.21	May 1 to Aug.20	Sep.5 to Dec.22	Jan.2 to Apr.21	May 1 to Aug.20
NO. OF WEEKS	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16
GRP.A(20 Stds)	C	J	C	J	C	C	C*---Graduation; Total Weeks: C 72; J32								
GRP.B(20 Stds)	--	C	J	C	J	C	C	C*---Graduation; Total Weeks: C 72; J32							
GRP.C(20 Stds)	--	---	--	C	J	C	J	C	C	C*---Graduation as GRP.A					
GRP.D(20 Stds)	--	--	--	--	C	J	C	J	C	C	C*---Graduation as GRP.B				
GRP.E(20 Stds)	--	---	--	--	--	--	C	J	C	J	C	C	C*---		
GRP.F(20 Stds)	--	--	--	--	--	--	--	C	J	C	J	C	C	C	
GRP.G(20 Stds)	--	--	--	--	--	--	--	--	--	C	J	C	J	C	C
GRP.H(20 Stds)	--	--	--	--	--	--	--	--	--	--	C	J	C	J	C
STDS 1st yr	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
ON 2nd yr	40	40	0	20	20	40	20	20	40	20	20	40	20	20	40
CAM 3rd yr	-	-	-	-	-	-	40	20	-	40	20	-	40	20	-
TOTAL	60	60	20	40	40	60	80	60	60	80	60	60	80	60	60
STDS 1st yr	--	20	20	--	20	20	--	20	20	--	20	20	--	20	20
ON JOBS 2nd yr	--	--	--	20	20	--	20	20	--	20	20	--	20	20	--
TOTAL	0	20	20	20	40	20	20	40	20	20	40	20	20	40	20
GRADUATES TO JOB MARKET	0	0	40	0	0	0	0	20	20	0	20	20	0	20	20

* Final Term 8 Weeks (Sept. 5 to Oct. 21) or (Jan.2 to Feb. 28).

DCIT TASK FORCE ON COOPERATIVE EDUCATION
CAMPUS/JOB DISTRIBUTION OF STUDENTS - 3 EQUAL TERMS - FALL ADMISSIONS ONLY - PLAN 5

	Yr-1(78-79)			Yr-2(79-80)			Yr-3(80-81) (steady state reached)			Yr-4(81-82)			Yr-5(82-83)		
TERM	F	W	Su	F	W	Su	F	W	Su	F	W	Su	F	W	Su
DATES	Sep.5 to Dec.22	Jan.2 to Apr.21	May 1 to Aug.20	Sep.5 to Dec.22	Jan.2 to Apr.21	May 1 to Aug.20	Sep.5 to Dec.22	Jan.2 to Apr.21	May 1 to Aug.20	Sep.5 to Dec.22	Jan.2 to Apr.21	May 1 to Aug.20	Sep.5 to Dec.22	Jan.2 to Apr.21	May 1 to Aug.20
NO. OF WEEKS	16	16	16	16	16	16	16	16	16	16	16	16	16	1	16
GRP. A(40 Stds)	C	J	C	J	C	J	C	C*---Graduation; Total Weeks: C 72; J 40		C	C*---Graduation as GRP. A				
GRP. B(40 Stds)	--	--	--	C	J	C	J	C	J	C	J	C	C	C*	
GRP. C(40 Stds)	--	--	--	---	--	--	C	J	C	J	C	J	J	C	J
GRP. D(40 Stds)	--	--	--	--	--	--	--	--	--	-C	J	-C	--	--	--
GRP. E(40 Stds)	--	--	--	--	--	--	--	--	--	--	--	--	C	J	C
STDS 1st yr	40	--	40	40	--	40	40	--	40	40	--	40	40	--	40
ON 2nd yr	40	40	0	--	40	--	--	40	--	--	40	--	--	40	--
CAM 3rd yr	--	--	--	--	--	--	40	40	--	40	40	--	40	40	--
TOTAL	80	40	40	40	40	40	80	80	40	80	80	40	80	80	40
STDS 1st yr	--	40	--	--	40	--	--	40	--	--	40	--	--	40	
ON JOBS 2nd yr	--	--	--	40	--	40	40	--	40	40	--	40	40	--	40
TOTAL	0	40	0	40	40	40	40	40	40	40	40	40	40	40	40
GRADUATES ON JOB MARKET	0	0	40	0	0	0	0	0	40	0	0	40	0	0	40

*Final Term 8 Weeks, Jan 2 to Feb. 28

PLAN 1

1. All 40 students are admitted at the same time. The coordinator arranges for 20 positions by January, and these are filled by students competing against each other. The employers select 20 out of 40 students. Advantages: Flexibility - i.e. if a few more or few less jobs are available the actual number of students in each batch can vary. For example, by January if only 18 students have been accepted by the employers - your Group A will then become that of 18 students whereas Group B will be 22 students (assuming no drop outs).

2. Groups A and B come together on the campus three times during their two year tenure. These common terms could be used to avoid costly duplications of courses.

3. First and second year groups are often together on the campus e.g. a common course can be designed for groups B and C in the Spring of 1980 and for groups A and D in the summer of 1980. This reduces the total number of courses to be offered during those terms. Furthermore, some of these common courses could be offered on a block basis.

4. When the steady state is reached, you will have highest number of students (40 first year, 20 second year and 40 graduating) on the campus during the fall term. Implication of this arrangement is that all your teaching faculty will be on campus during this term whereas some can take their two months holidays during winter, some during spring and a large number during summer.

5. By arranging common courses in spring and summer, by "blocking" method, almost all your present faculty could be free to take summer vacation.

6. This Plan is particularly suitable for those technologies in which the job market is slow (not completely dead) during fall and winter months (20 students) but picks up activity in spring and summer (40 students). Thus, an arrangement to have only 20 students on the job during fall and winter, whereas 40 students are out working during spring and summer.

7. All the 40 graduates enter the job market at the same time at the beginning of winter term. This may be good for certain technologies e.g. accounting and bad for others e.g. mining.

8. Back-to-back job terms are not available e.g. students are available on the job either for 10 or 15 week periods only at a stretch.

9. Total classroom instructions could be between 70 and 75 weeks. Total on-the-job experience could be between 30 and 37 weeks.

10. Total educational period: 27½ months (2 years and 3½ months including short vacations).

PLAN 2

1. Admissions are staggered - Group A(20students)are admitted in Fall and Group B in Summer. Flexibility of transferring students from Group A to B and vice versa, if enough jobs are not available, is limited in this arrangement.

2. Groups A & B (or C & E; E & F) come together on the campus three times during their 2½ year tenure. These common terms could be used to avoid costly duplications of courses.

3. Opportunity to set up a common course for first and second year students presents only once i.e. in the winter term.

4. When the steady state is reached in year 3, you will have highest number of students (40 first year, 40 second year and 20 graduating) on the campus during the fall term. Implications of this are discussed in Plan 1 - point 4.

5. Number of students on the campus is lowest during the summer months(20 incoming students and 20 graduating). This allows a large number of your faculty to be free for summer vacation.

6. This plan is suitable for those technologies in which the job availability is nil (completely dead) in Fall, begins to open up in winter(20 students), speeds up in spring (40 students) and is in full steam in summer (60 students).

7. All graduates do not enter the job market at the same time. e.g. Group A graduates at the end of fall term while group B graduates at the end of summer term.

8. Back-to-back work terms are available to some students. e.g. Group A is out working continuously for two terms from April beginning to the end of August. A suitable arrangement for some technologies such as Agri-management.

9. Total classroom instructions could be between 70 and 75 weeks. Total on-the-job experience is for 34 weeks.

10. Total educational period: 27½ months(2 years and 3½ months including short vacations).

PLAN 3

1. Staggered admissions (see plan 2, point 1).

2. Groups A & B (or C & D, etc.) come together on the campus 3 times (see plan 2, point 2).

3. Three opportunities to set up common courses for first and second year students (see plan 1, point 3).

4. At the steady state, the fluctuation in the number of students on the campus is limited and varies from a maximum of 80 in fall to 40 in summer (compare this with plans 1 and 2 - point 4).

5. Faculty time during summer months in this plan is more than that required under plans 1 and 2 because common courses may not be possible for graduating and incoming classes.

6. Plan is suitable for those technologies in which job market is low (20 students) in fall, winter and spring, but peaks in summer (60 students of which 40 students are essentially of the first year level and 20 are from graduating class. Employers may see, in this, a situation where graduating class students can assist in the training of the first year level students).

7. One group (half the graduates) graduates at the end of summer months and another at end of fall months. This may be an ideal situation for finding permanent employments, since student placements during these periods are low.

8. Back-to-back job terms are available to both the groups. Similarly, each group has three consecutive "on-the-campus" terms.

9. Total classroom instructions could be between 73 to 75 weeks. Total on-the-job experience could be between 34 to 35 weeks.

10. Total educational period: 27½ months (2 years and 3½ months including short vacations).

PLAN 4

1. Staggered admissions (see point 1 in previous plans) - three equal terms.

2. Groups A & B (and C & D) come together for campus instructions, only for less than two terms (compare with Plans 1 through 3, point 2).

3. Common courses for first and second year students can be arranged during two and possibly three terms.(See point 3 on previous plans).

4. After the steady state, there is very little fluctuation in the number of students on the campus. This situation may allow the technology to increase the number of incoming students without straining the facilities.

5. Although three groups of students are on the campus during the summer months, it may be possible to reduce total teaching load during these months by giving common courses for first year and second year students on 'block' or 'cycling' basis. This will free many faculty members for summer holidays.

6. Some professionals, such as accountants, need extra help particularly during winter and spring. Plan 4 is particularly suited for such technologies as maximum number of student placements are provided for during this period.

7. Half of your graduates are also released on the job market during this period thus giving them a better chance. Another half graduates at the end of summer and will thus face less competition from the graduates of other institutions.

8. No back-to-back job terms are provided for. Four months at a time is a satisfactory time frame from the viewpoint of the employers. A back-to-back job term arrangement will take the student away from the campus for eight months which may be a bit too much for the student as well as for the Institution.

9. Total classroom weeks 72; total on-the-job weeks 32

10. Total educational period: 28 months (2 years and 4 months).

PLAN 5

1. All students admitted at the same time as is the current practice.

2. No common terms for first and second year students. Thus, during a given term the department is teaching either first year or second year students (except during the fall term and part of winter). Such arrangements would reduce the total teaching load in a department, would enable to theoretically double its number of admissions.

3. Common courses for students in different years are not possible. (It may not be advisable to give a course common to incoming and graduating students).

4. The number of students on the campus during summer term is half that during the fall and winter terms.

5. Blocking or cycling of courses is not required.

6. There is a steady number of students on-the-job throughout the year. Such an arrangement is very good from employer's viewpoint as well as from the viewpoint of the coordinator who will have to create cooperative positions.

7. All graduates enter job market at the same time (as they presently do) but at the end of the summer term.

8. No back-to-back job terms are provided for (see point 8 on plan 4)

9. Total classroom weeks 72; total on-the-job weeks 48.

10. Total educational period 30 months (2 years and 6 months).

NOTE: All things considered, this could be the best plan to adopt since it is less expensive, least disturbs the present arrangement, perhaps more acceptable to many employers, requires less faculty during summer, provides a steady number of coop. students for jobs, and requires no duplication of courses. The only problem is, however, that the total educational period for the students becomes 30 months although the student is gainfully employed for nearly 12 of these months.

APPENDIX I

REFLECTIONS ON WHAT A COORDINATOR IS

James W. Wilson
Center for Cooperative Education
Northeastern University

The intent of this essay is to seek a meaningful answer to the oft asked question, "What is a cooperative education coordinator?" A response to the question is of considerably more than passing interest to many persons who are currently being asked to take new assignments as coordinators in colleges and universities throughout the country. It is of interest, too, to many who have been coordinators for some time and have concerns about their professional role within their colleges and universities.

A customary approach to describing a job is to ennumerate the duties entailed. Thus, a number of researchers have documented the responsibilities of cooperative coordinators. Emick (1946), Himelick (1947), Kohman (1952), and Twogood (1946) delineated the duties of high school level coordinators. Seaverns (1970) developed a cogent list of functions to be fulfilled by the college level coordinator. A survey of both collegiate and industrial coordinators by Buttery (1971) confirmed the significance of Seavern's fourteen functions. Because they describe with considerable accuracy the actual functions performed by coordinators, they are reproduced here:

(1) to coordinate and supervise the cooperative employment of an assigned group of students;
(2) to serve as the liaison official between the cooperative institution and the employers regarding administrative and operating requirements of the program;

(3) to assemble individual inventory records of his students for counseling and placement purposes;
(4) to conduct group orientation meetings for instructional as well as review purposes;
(5) to help his students secure initial satisfactory cooperative employment as well as subsequent opportunities through the placement process;
(6) to conduct follow-up activities regarding all placements by regularly checking each student's job performance through company visits and individual student conferences;
(7) to solicit cooperative jobs ranging from entry jobs to training programs in business, industry, government agencies, or service agencies depending upon the needs and qualifications of his students;
(8) to disseminate occupational information in order to assist his students in making wise choices, plans, and adjustments relative to career planning;
(9) to counsel his students regarding their educational, vocational, and personal development;
(10) to serve as a referral agent in cases where there are special counseling problems;
(11) to make division assignments in order to provide the necessary alternation of students on cooperative jobs to insure continuity of service to employers;
(12) to maintain functional departmental and personal records and reports;
(13) to represent the viewpoint of the Department of Cooperative Education on various institutional committees; and
(14) to vigorously promote, encourage, and recommend the advantages of the cooperative plan to the administration, faculty, students, employers, high school guidance counselors, community organizations, and the public to insure their supportive efforts and, in general, to enhance the growth of cooperative education.

Despite their accuracy in describing typical responsibilities of coordinators, these functions are of only limited value in coming to grips with the question, "What is a cooperative coordinator?" They are so diverse that it is not possible to extract from them a central focus. Seavern's definition of a coordinator, which seems clearly to be an effort to extract a meaningful statement from these functions, demonstrates this point. He defines a coordinator as "... usually a member of the full-time faculty with academic rank who serves in the multifaceted capacity of a placement specialist, vocational counselor, salesman, teacher, administrator, educational recruiter, trouble-shooter, mediator, and referral agent." (Seaverns, 1970, p. 14) This correctly reflects the functions of a coord-

inator but it is an awesome conception of what a coordinator is.

A contrasting approach to describing the job of cooperative coordinator has been attempted. Rather than coping with the conglomerate of functions, a significant activity or characteristic has been isolated and stressed as the essential nature of the job. For example, attention has been called to the fact that coordinators devote a substantial portion of their time to developing appropriate job situations and to placing students in them. In consequence, the conclusion has been drawn that the coordinator is really a placement officer. In like fashion, it has been noted that the coordinator most typically relates to the student in a one-to-one relationship - interviewing, counseling, giving advice. Emphasis upon this characteristic has led to the conclusion that the coordinator is in reality a counselor. The observations upon which both these conceptions are based are accurate. The conceptions themselves, however, are distortions because they stress a single element to the exclusion of all others.

The thesis of this paper is that the essence of the coordinator's job can best be understood in the light of the nature of cooperative education itself. In an earlier essay, it was argued that cooperative education is a plan of education which incorporates work, to be performed by students, as an integral part of the curriculum (Wilson, 1970). Of significance here is the assertion that cooperative education is an example of educational methodology. As such, it should be viewed in light of the process of education. There are three interrelated elements to this process (Tyler, 1950). The first step in the process is to specify the educational objectives - the goals to be achieved by students. The second step is to design or to identify those learning experiences which are best calculated to help students achieve the specified goals. The

third step is to evaluate the extent to which the educational objectives have been achieved by the students.

Reflection upon the educative process makes clear the interrelatedness of its elements. Educational objectives become the criteria for both the selection of relevant learning experiences and the determination of observations to make when appraising student learning. Not only are learning experiences selected in light of objectives, but the availability of experiences becomes a basis for judging the soundness of goals and the learning experiences, as the objectives are vital to the process of evaluation. Finally, the evaluative process not only provides important information on student achievement but furnishes a basis for judging the goodness of the experiences provided and the validity of the goals established.

It is through the application of the educative process to the coordinator's job that a meaningful view of the essence of his job emerges. Consider the major thrust of the coordinator's activities. In collaboration with the individual student, goals are established that are responsive to the needs of the student. They may be goals which focus upon career development, upon personal development, or upon social development. They will surely, however, be consistent with the student's total educational program. Once the student's learning goals have been explicitly stated, it is the coordinator's responsibility (again, often in concert with the student) to identify appropriate work experiences and work environments which offer the greatest likelihood of helping the student to achieve his educational objectives. Although appraisals will be made throughout the work period, major attention will be given to evaluation at the conclusion of the experience. The employer submits an evaluation of how the student performed on the job. The coordinator is responsible for taking this information and translating it to the

student in terms of his educational goals. He is also responsible for helping the student to assess his total experience, relating that experience to his educational and developmental goals. This assessment is used to guide the student's future learning efforts.

The argument to be made at this point is that since the coordinator is charged with the functioning of an educational plan and since his essential responsibilities correspond to the educative process, he is in fact an educator. As surely as curriculum builders or teachers who plan or implement specific instances of the educative process are educators, so too is the cooperative coordinator. To be sure, it is a highly specialized example for which the term, "teacher" does not adequately apply. "Learning specialist" is often used to designate a member of an educational staff who provides a highly specialized skill or body of knowledge within the context of a total educational program. The reading specialist, the study skills specialist, the learning resources specialist are all examples. It would not be inappropriate to identify the cooperative coordinator as a learning specialist. A more recent term being applied to professional educators who guide the learning efforts of students in various off-campus and external degree programs is "learning facilitator." Again, such an identification would appear reasonable for the cooperative educator.[1]

The particular educational title used to designate the coordinator's job is less important than the conception of him as an educator. The implications of this conception are profound. While it is not the purpose of this essay to develop the consequences of thinking of the coordinator as an educator, it may nonetheless be useful to point out

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[1] The term "faculty" has been avoided in this discussion because in the author's judgment, "faculty" refers quite properly to a status accorded an educator within an institution and by that institution. While granting faculty status to a coordinator is entirely consistent with the conclusions of the analysis presented here, the issue is not germane to the intent of the essay.

a few of these in order to indicate the significance of the view. For example, it surely is suggestive with respect to the relationship the coordinator should have with the teaching staff and curriculum planners. It provides an overall and compelling focus to the coordinator as he develops work experiences and as he interviews students before and following work terms. It suggests a sound criterion for judging the meaningfulness of a given work experience.

In summary, the following definition is offered: a coordinator is an educator whose specialization is the provision of meaningful learning experiences in the form of work situations and the assisting of students to relate these experiences to their educational goals.

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Seaverns, Charles F. Jr. A Manual for Coordinators of Cooperative Education. Boston: Northeastern University, 1966.

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APPENDIX J

CO-OP ED OFFICE
Room 3209, 10, 12
(201) 877-3420

ESSEX COUNTY COLLEGE
303 UNIVERSITY AVE.
Newark, New Jersey 07102

DATE Dec. 13, 1977

FOR OFFICE USE
CO-OP COURSE NO. 174-OBC
COORDINATOR Dilson
COMPENSATION
COMPLETION DATE

Automatic Switch Corp. — COMPANY NAME
Alan Smith 152-44-0275 — STUDENT'S NAME

ADDRESS Hanover Road CITY Florham Park STATE N.J. ZIP 932 PHONE Andy Senneca

MAJOR Elec. Engineering TOTAL CREDITS ____ G.P.A. ____ CURRENT CREDITS ____

STATEMENT OF COOPERATIVE EDUCATION OBJECTIVES

Each semester that a student is enrolled in the Cooperative Education Program, it is necessary that the College help the student determine what new learning opportunities are possible on his job. These objectives enable us to determine the educational relevance of the work experience.

These objectives should be specific and measurable. They will be reviewed with the supervisor. At the end of the Semester, the student/employee and the supervisor will be asked to evaluate the level of attainment of each objective.

		END-OF-TERM RATING*	
		STUDENT	SUPERVISOR
1.	To learn the principles of remote control relays including line run and voltage drop.	1.	1.
2.	To learn capacities of various electrical wire sizes and know how to utilize appropriate wire for specific testing tasks.	2.	2.
3.	To learn how to use test equipment including voltmeters, ammeters, dialectric testing and other equipment.	3.	3.
4.	To know and understand different voltage systems, such as 3-faced, 3-wire; 3-faced, 4-wire; single faced, 3-wire; and to learn the efficiency of each.	4.	4.
5.	To learn the application and purpose of automatic switches and generators such as emergency power remote control, automatic starting controls and other applications.	5.	5.

COMMENTS: ____

*RATING SCALE
1=Limited accomplishments
2=Average accomplishments
3=Better than average accomplishments
4=Far exceeds average accomplishments

AGREEMENT

We, the undersigned, agree with the validity of the learning objectives listed above. The employer and the College agree to provide the necessary supervision and counseling to insure that the maximum educational benefit may be achieved for the employee/student's work experience. The student agrees to abide by the Cooperative Education guidelines. The employer supervisor will evaluate the employee/student's job performance at the end of the grading period. The College will award academic credit and grade for work successfully accomplished

Student Signature ____ Supervisor Signature ____

Cooperative Education Instructor/Coordinator ____

FINAL GRADE

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CO-OP ED. OFFICE
Room 3210-11 & 12
(201) 877-3420

ESSEX COUNTY COLLEGE
303 UNIVERSITY AVE.
NEWARK, NEW JERSEY 07102

FOR OFFICE USE
CO-OP COURSE NO. 174
COORDINATOR _____

DATE August 2, 1977

E.C.C-Physical Plant — COMPANY NAME
James Browne SSN-148/14/8253 — STUDENT'S NAME

ADDRESS 303 University Ave CITY Newark STATE N.J. ZIP 07102 PHONE# _____

MAJOR Bus. Administration MINOR _____

STATEMENT OF COOPERATIVE EDUCATION OBJECTIVES

Each semester that a student is enrolled in the Cooperative Education Program, it is necessary that the College help the student determine what new learning opportunities are possible on his job. These objectives enable us to determine the educational relevance of the work experience.

These objectives should be specific and measurable. They will be reviewed with the supervisor At the end of the Semester, the student/employee and the supervisor will be asked to evaluate the level of attainment of each objective.

	END-OF-TERM RATING*	
	STUDENT	SUPERVISOR
1. To establish time and Motion criteria for each of the 39 housecleaning employees under his control and to demonstrate improvement in work-load performance.	1.	1.
2. To improve system of inventory control of hosekeeping materials including responsibility for timely procurement and orderly utilization.	2.	2.
3. To set up standards of cost for materials used and for services performed and make comparative evaluations to measure adequacy of personnel productivity.	3.	3.
4. To prepare, maintain, and adjust schedules of assignment of personnel to hosekeeping activities, selecting appropriate individuals in the light of the above evaluation criteria.	4.	4.
5. To develop and strengthen human relations sensitivities and make judgmental decisions with respect to personnel needs for motivation and growth.	5.	5.

COMMENTS: _____

*RATING SCALE
1 = Limited accomplishments
2 = Average accomplishments
3 = Better than average accomplishments
4 = Far exceeds average accomplishments

AGREEMENT

We, the undersigned, agree with the validity of the learning objectives listed above. The employer and the College agree to provide the necessary supervision and counseling to insure that the maximum educational benefit may be achieved for the employee/student's work experience. The student agrees to abide by the Cooperative Education guidelines. The employer supervisor will evaluate the employee/student's job performance at the end of the grading period. The College will award academic credit and grade for work successfully accomplished.

Student's Signature
James Browne

Employer Supervisor Signature
Frank Cobb

Cooperative Education Instructor/Coordinator
Reginald E. Gilbert

Employer Copy

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APPENDIX K

OUTLINE OF FACTORS SIGNIFICANT TO THE DEVELOPMENT OF SUCCESSFUL COOPERATIVE EDUCATION PROGRAMS

James W. Wilson
Center for Cooperative Education
Northeastern University

The following statements are intended to outline important factors relating to a decision to institute a cooperative program and the subsequent implementation of that decision. Although written in terms of initiating new programs of cooperative education, these statements apply to strengthening and expanding existing programs as well.

A. The decision to initiate a program of cooperative education.

1. It is essential that the decision unequivocally be based upon the understanding that cooperative education is an educational tool for the development of students. While it is true that other outcomes of value to students and the institution may accrue they do not constitute a sound basis for the development of a viable program.

2. Institutional commitment to cooperative education is imperative to the success of a program. While faculty support is important and must be achieved in time, evidence indicates that strong and sustained support from the top administration of the institution is essential from the outset if the program is to succeed.

3. The program will have the greatest chance of success if it involves a substantial portion of the student body on a mandatory basis. A department of a college trying to operate an elective cooperative program faces such grave problems that the likelihood of a viable program developing is quite remote.

B. The implementation of the decision to initiate a cooperative program.

1. Because of the many complex problems needing solution before an effective program of cooperative education can operate, it is imperative that extensive planning be done prior to the actual starting of the program. Although the planning time needed will vary among institutions it is generally believed that a year is required. The following items constitute important elements of the planning period.

a. At the outset a full time director-coordinator must be appointed. It will be his responsibility to be the principal planner and to give counsel on institutional changes needed to affect the plan.

b. Because the cooperative program is educational and constitutes a portion of the total curriculum it is important that the director-coordinator report to the academic dean or his counterpart.

c. The director-coordinator must have a full time secretary and adequate budget to provide for:

1.) Necessary travel.
2.) Consultants on campus.
3.) Attendance at workshops, conferences, and professional meetings.
4.) Preparation of brochures and other printed matter.
5.) Operation of his office, including equipment and telephone.

d. The planning responsibilities of the director-coordinator include the following:

1.) Explain the educational significance of the cooperative experience to both faculty and students, seeking to obtain the support of both groups. This is a vital but often difficult task which, for all practical purposes, never ends.

2.) Develop meaningful cooperative work experiences. This task will differ among institutions according to instructional curricula involved in the program and the geographic location of the institution.

3.) Work with the appropriate persons to establish a calendar which will permit the successful operation of the cooperative program. This calendar must avoid penalizing students by scheduling required courses while they are on cooperative assignments and then not making them available when the students return to the campus. The calendar should also provide for the periods of work and periods of on-campus study to be of sufficient length that the student may totally immerse himself in study and in work. The calendar chosen will have considerable impact upon the operation of the institution.

4.) Work with the registrar, director of housing, financial aid officer, and coaches on anticipating and resolving problems which the fact of cooperative education will likely produce.

5.) Develop and print explanatory material and policies relating to the program (Cooperative Handbook) and promotional materials.

e. Because the number of experienced persons who might be director-coordinator is limited it will likely be necessary to appoint persons to this position without deep knowledge of cooperative education. Hence, it is vital that the institutional plan provide for consulting service, (15-20 days in the year) and the director-coordinator attend available workshops, institutes, conferences and professional meetings.

2. Once plans for the cooperative program have been made and accepted as an institutional program it should be implemented in full at the earliest possible date. Despite the frequent appeal of gradually phasing the program in, there is evidence to suggest this strategy impedes the development of cooperative education.

C. Costing the cooperative education program.

1. It is essential that prior to the implementation of a plan for cooperative education a careful cost analysis be made. It appears that a number of institutions considering cooperative education are under the impression that simply having a cooperative program will make or save them money. While it is true that under certain conditions of operation the cooperative program can be self-sufficient at the outset implementing a cooperative program constitutes a drain on institutional resources.

2. Institutions applying for grants to plan or start-up cooperative programs should have a plan to either absorb the costs of the program after the grant runs out or to obtain other support.

Tyler, Ralph W. Basic Principles of Curriculum and Instruction, Chicago: University of Chicago Press, 1950.

Wilson, James W. "On the Nature of Cooperative Education." Journal of Cooperative Education, Vol. VI, No. 2, May, 1970. pp. 1-10.

APPENDIX L

Minister
Employment and Immigration

Ministre
Emploi et Immigration

For Release

Pour publication

Date
Subject

Date
Sujet

NOTES FOR AN ADDRESS

BY THE

HONOURABLE BUD CULLEN

MINISTER OF EMPLOYMENT AND IMMIGRATION

MEMBER OF PARLIAMENT FOR SARNIA-LAMBTON

TO THE

CANADIAN ASSOCIATION FOR CO-OPERATIVE EDUCATION

LONDON, ONTARIO

MONDAY, AUGUST 29, 1977, 8:00 P.M.

Please Check Against Delivery

I am indeed honoured to speak to such a distinguished gathering as that assembled here tonight. Your invitation to deliver the key-note address to this co-operative education conference is particularly welcome, as this is a subject in which we share a common interest. On a personal note, I have been concerned about this matter for many years, particularly after serving as a member of the Sarnia Board of Education.

I have heard it said recently that co-operative education in Canada is at the crossroads. Is that a fact? Whatever the thoughts are on that question, there can be no doubt in anyone's mind that co-operative education must be given more and more prominence and priority if it is to benefit Canadian youth. As your conference theme this year -- "Co-op: New Demands - New Directions" -- shows, nobody is more aware of this than you. Along with many others, I will follow your deliberations over the next few days with great interest.

To facilitate understanding, I would like to share with you my definition of Co-operative Education. To me, Co-operative Education conveys the impression of a formal educational process, integrating alternating periods of academic learning with practical, supervised application in the work place. But it has also been used to denote a range of related concepts, from occasional employer visits for work observation, to job creation or training-in-industry. So to ensure that we have a common understanding. Let me elaborate.

Although I do not perhaps put as strict an interpretation on the

..../2

I think that we are in fundamental agreement about co-operative education as a method of learning and about its philosophy. I also believe that both work experience and co-operative education have a beneficial effect on the long-term functioning of the labour market. That is why the Canada Employment and Immigration Commission is interested in it.

We are aware, for example, that one of your own member institutions -- the University of Waterloo -- reports that more than 90% of co-op graduates enter industrial employment with co-op employers. I have read reports of individual cases in which both the students and participating employers have had nothing but praise for co-op's beneficial results. Not only have the students proven themselves to potential employers, but at the same time they have accumulated up to two years of highly relevant job experience.

There are other benefits as well. Institutions can offer a more attractive educational program attuned to the realities of the non-academic world. They can more easily update their courses to include the most recent technological developments in industry from information brought back to the classroom by co-op students. Participating employers receive not only the benefit of the students' labours during their assignments but also have an opportunity to evaluate the students in terms of permanent employment upon graduation. As well, such programs allow students to test their classroom-acquired skills and knowledge in practical employment settings, to orient themselves to the world of work, and to make adjustments in their courses and career plans before they have progressed too far into areas for which they are not suited.

How can the Federal Government best help? We were made aware, through various representations, that two of the most pressing problems in this area are the difficulty of starting up new programs and the additional administrative costs involved. There are also jurisdictional issues which have to be considered.

In order to encourage the growth of this 'mode of education', my Commission has initiated a program which offers assistance to provinces in a way that respects the division of responsibilities between manpower and education. In essence we are making available to the provinces half the non-academic costs of approved co-operative education and work experience projects during their first year of operation. We will pay expenses incurred in establishing a co-ordination office, in developing co-operative employment opportunities and other similar administrative costs. We will contribute up to $100,000 per project toward these start-up costs. I hope that this funding -- a start -- will give impetus to the gradual growth of such programs and provide incentives for experimentation and innovation in this area.

I am aware that some of you -- the pioneers in this field -- have reservations about federal assistance to those wishing to become involved in co-op education for the first time. I understand your concern that the standards and personal commitment inherent in present co-operative education programs might somehow be watered down. This is a legitimate concern given that you have worked so hard to foster excellent quality. These high standards must and will be preserved. Our experience as a nation tells us

..../6

Once we have approved a financial plan, and signed a funding agreement for a specific project with the province and educational institution involved, the Federal Government will transfer funds to the province for that purpose. I anticipate that the financial distribution procedure will vary from province to province, but I would hope that the process will be expeditious in every case.

Our role is not to run co-operative education programs. It is that of a catalyst in a growing process that will benefit both co-operative education and the labour market. In all of this, we must not lose sight of the fact that the primary emphasis of co-op is, and must remain, educational in the broadest sense of the word. Indeed, the federal program is designed to protect this integrity. That is why, for example, we insist that participants must be full-time students and that placements must be with established employers who can properly provide job assignments in a business setting.

We want to see the projects we sponsor succeed. That, in part, is why the entrance standards are high. We want people to know what they are getting into before they undertake a program. We are offering needed encouragement but it should be understood that our financial participation has limits both in terms of dollars and duration. The projects which we help initiate may already be in the conceptual or planning stages -- projects which universities, community colleges, and educational authorities are serious about implementing. We do not, however, intend to play an ongoing support role for individual co-operative education programs.

that, of the five largest co-op institutions in Canada, not one is located in any of our major metropolitan areas. Toronto, Montreal and Vancouver, and other large urban centres all seem to offer obvious potential for expansion of co-op education.

I would also hope to see an increasing number of co-operative education programs offered in such areas as arts and the humanities. At present only 10% of Canadian co-op students are enrolled in programs outside the technical and business areas. I am aware, for example, that the University of Lethbridge has, for the last several years, offered co-op to its arts and science students. I am also encouraged by the positive start made in this direction by the University of Waterloo with its recent introduction of a co-op program in English. Surely there is potential for developing programs geared to the transferable skills taught in our institutions of higher learning. It is most certainly an area for further investigation.

Another issue to which priority should be given is the relationship between co-operative education and other similar systems for combined education/employment experience. In particular, you will no doubt want to determine your position vis-à-vis work experience or work study programs at the secondary school level. It would appear to me to be sensible to increase the impact of the total education system by building post-secondary co-op programs on what has gone on before in the high schools. You might want to consider such a rationalization.

Because of its past success and future promise, public policy makers and

to share with you our efforts to foster co-operative education. I hope that I have been able to help stimulate your thoughts about some of the new directions and new demands evolving in this field. I wish you much success with your conference and in the days ahead with your endeavours in the area of co-operative education.

Government of Canada / Gouvernement du Canada

APPENDIX M

MEMORANDUM NOTE DE SERVICE

All CMC Managers
All Sr. Managers
All Branch Managers
CAY Centre
E & P Section

E. Rumohr
Youth Consultant
Pacific

SECURITY CLASSIFICATION / COTE
MAR - 2 1977
OUR FILE / NOTRE REFERENCE
DIVISION
STUDENT EMPLOYMENT OFFICE
Vancouver Community College Technology

DATE
22 February 1977

SUBJECT / OBJET Co-operative Education

As a result of our Minister's speech in October (see particularly Employment Strategy, page 5), several CMC's have requested information on the subject programme. Attached to this memo is a one-page review developed by the Youth Employment Division for distribution to provincial representatives who attended the third National Consultation on Vocational Guidance, held in Ottawa, February 8 and 9.

The major points to keep in mind when reading the attachment are:

1) Our department will accept proposals from the Ministry of Education, NOT from interested secondary or post-secondary institutions.

2) Funding will be for specific proposals addressed to the general criteria outlined.

3) Funding is for a maximum of 12 months.(i.e. may be over two fiscal/academic/calendar years.)

4) The funding must follow the suggested federal-provincial formula, i.e. 50% of the project costs will be provided by our department (to a maximum allowable of $100,000.00).

5) The reference, in the second paragraph, to the exclusion of wage subsidies applies ONLY to excluding student wage subsidies. Salaries of Co-op. Education Co-ordinators could be included as part of the grant proposal.

For those of you who wish a clearer picture of Co-operative Education, and of its potential value, here are some highlights:

Co-operative Education is a programme (usually at the post-secondary level) that combines academic study with a paid work experience. Traditionally, the academic portion is at least one semester/term, followed immediately by a paid work experience in either the public or private sector for a full semester/term, followed by a return to

the post-secondary institution for further academic study. Other co-op. work experiences could follow in a similar pattern.

The student is paid by the employer (frequently at the minimum wage) for the time she/he is on the work experience. With the possibility of an escalation of tuition fees this year, a guaranteed additional income for Co-op. Education students will be most valuable in enabling them to maintain their educational plans.

Another major benefit is the feedback from the employer to the professor/instructor on:

(i) the students' progress during the work experience;

(ii) the instructor's upgrading of his knowledge, and of his learning strategies as reflected against the reality of the employer's needs.

The actual co-op. work experiences are identified by a body of co-ordinators working out of the co-op. education office, and in close conjunction with the instructors of the co-op. programme. This function, although similar to the activities of the on-campus placement centre, is usually separate from the graduate recruiting programme which still is needed for those students who are either not on a co-op. programme or, although on a co-op. programme, do not identify a suitable full time employment opportunity with their co-op. work experience employer(s).

For your information, the University of Victoria is now offering co-op. education in their Physics, Chemistry and Astronomy Departments, and may expand into other faculties in the near future.

Both S.F.U. and Vancouver Community College are currently investigating the potential of offering co-op. education.

Selkirk College has a staff member investigating the possibility of offering co-op education in a computer science course.

The foregoing is probably more than you ever wanted to know about co-op. education, but this will teach (some of you) to ask.

E. Rumohr

Attach.

cc: I. Thomson, Director General/Designate
G.E. Hubley, A/Director General
P. Jacob, Director, MSS
G. Meehan, Chief, CD
M. Perry, RISM
W. Hurd, Director, MT
L. Young, Regional Economist
J. Jonker, Fed/Prov. Co-ordinator
Paul Cullifor̄, Youth Employment Division - NHQ, Ottawa

DEPARTMENT OF MANPOWER AND IMMIGRATION

CO-OPERATIVE EDUCATION PROGRAM

I Program Description:

The Co-operative Education Program is one of the youth employment and employability measures announced by the Minister of Manpower and Immigration, the Honourable Bud Cullen, on October 21, 1976 as part of the government's Employment Strategy.

In it the provinces will be invited to submit proposals for the development of co-operative education projects which lend themselves to wider application. The federal government will make contributions toward first year start-up costs, excluding wage subsidies, of approved projects.

Projects will place full-time secondary and post-secondary students in work settings related to their courses of study. The plan is intended to give students a better understanding of the work world, enabling them to make more realistic career decisions. The maximum federal contribution will be limited to $100,000 for any one project.

II Program Objective:

To encourage and assist the development and expansion of co-operative education programs in order to more effectively facilitate the transition of young people from school and their integration into the labour force.

III Proposal Guidelines:

In selecting projects against which to apply limited financial resources, the federal government will take into account a number of factors. These guidelines include the following considerations:

-whether participants are full-time students;
-whether work placements are with established employers;
-whether post-secondary placements are course-related;
-whether or not the project will offer new or expanded service;
-the availability of sufficient suitable job experience placements;
-the current provincial youth unemployment situation; and
-the potential of the program for innovation or development of co-operative education models having wider application.

As well, proposals should include an indication by the province that it is committed to continuing the program, if successful, upon termination of federal funding.

APPENDIX N

Summary of federal support for post-secondary cooperative education in the United States 1970-1977*

	1970	1971	1972	1973	1974	1975	1976	1977**
Number of Coop Schools in U.S.	795	271	311	566	759	954	1,017	1,180
Number of Coop Students in U.S.	30,000	35,000	38,000	80,000	140,000	165,000	190,000	-
Number of Institutions receiving federal funds for Coop	80	103	92	412	427	390	293	267
Total Amount Granted for:								
a) Administration	$1,457,278	$1,575,000	$1,655,000	$10,000,000	$10,000,000	$10,000,000	$ 9,968,000	
b) Training	$ 75,000	$ 25,000	$ 45,000	$ 580,000	$ 533,000	$ 503,000	$ 612,901	
c) Research	NIL	NIL		$ 170,000	$ 197,000	$ 247,000	$ 119,044	
Total	$1,532,278	$1,600,000	$1,700,000	$10,750,000	$10,750,000	$10,750,000	$10,699,945	$12,212,631

*Source: Cooperative Education Awards, 1970-76, U.S. Department of Health Education, And Welfare/Office of Education, Bureau of Post Secondary Education, p. 4.

**Updated information supplied by U.S. Department of H.E.W.

APPENDIX O

BRITISH COLUMBIA INSTITUTE OF TECHNOLOGY

TFCE - SURVEY FORM NO. 5 EMPLOYER

1978 - 01 - 20

1. Name of Company or Agency_____

2. Address_____
Street City Zip Code

3. Phone_____

4. Type of business, industry or agency_____

5. Name of respondent_____

Title_____ Phone_____

6. Approximate number of employees as of December 1977:_____

Full-time_____ Part-time_____ Male_____ Female_____

7. Please estimate the percentage of your employees whose ages are:

Under 20___, 21-30___, 31-40___, 41-50___, 51-65___, Over 65___

8. Please estimate percentage of employees continuously employed by your organization:

Under 1 year___, 1-3 years___, 4-9 years___ Over 10 years___

9. Please estimate the percentage of your employees who have:

Less than a high school education___ A high school diploma or equivalent___

Up to 1 yr. college/tech. school training___ 2 yrs. college/tech. school certificate or diploma_____

Bachelor's degree___ Advanced degree___

10. Please check the response(s) below which most nearly describes your organization's overall policy concerning in-service training and education.

___ a. Formal in-service training is provided for all employees.

___ b. Formal in-service training is available to employees only in the following categories (please specify).

_____

_____

___ c. Our in-service training is informal; employees are encouraged to take advantage of opportunities for formal education.

___ d. Neither in-service training nor continuing education is required.

___ e. We seek in-service and/or educational programs for employees in the following categories:

_____

_____

___ f. Other (or comments) _____

_____

_____

_____

11. In the attached table, please indicate the distribution of your work force in the following occupational categories, estimating the percentage of each total who are primarily students. Also indicate what positions in your organization could accommodate B.C.I.T. cooperative education students (as described) if they were available for employment in learning sites. Please list types of positions and indicate the appropriateness of rotating students in these positions, every 3 to 8 months.

APPENDIX P

In approaching cooperative education, the committee drew heavily on the guidance of Dr. Parikh. This appendix contains three documents prepared by him:

1. a proposed course of action in cooperative education;

2. a statement of the questions to be answered by the committee;

3. a flow process suitable for initiating cooperative education.

Dr. V.M. Parikh.
Sept. 19, 1977

Proposed Course of Action in Coop Education

1. Survey all BCIT departments for their work-experience programs and tabulate factual information such as: (a) type of work-exp. program, (b) number of students participating in work study, (c) student evaluation, (d) degree of work-experience, (e) no. and duration of work terms, (f) work experience optional or mandatory, (g)payments received by students, etc.

2. Personal interviews with department heads to assess their opinions and experiences regarding their program, its benefits and shortcomings, their plans, aspirations and problems.

3. Statistical survey of all BCIT day students to tabulate their career objectives, educational background, financial and family background, work-experience, geographical distribution, etc.

4. Survey Coop programs at other Canadian institutions and prepare a summary of the Coop patterns they follow.

5. Establish BCIT contact with CAFCE and propose the formation of an agency for nationwide placement of Coop students.

6. Examine the models developed at some of the U.S. and British (including other countries' institutions and assess learning outcomes of such programs.

7. Develope a resource center on Coop education containing books, articles, working models and calendars of other coop institutions. This material will be presently kept in my office (Portable A-1, Office # 9) and will be made available to anyone interested.

8. Recommend to TFCE a model worthy of BCIT consideration.

9. Encourage selected departments to undertake a short study of the ability of the industry in their field to absorb learners.

10 Recommend to TFCE certain programs in which Coop education can begin for '78-'79 year on an experimental basis.

11 Study financial implications of such recommendation and explore avenues for funding.

12 Assist departments in approaching industry and union leaders so that the students can be placed in industry starting fall '78.

To evolve an ideal model for BCIT Coop education, following questions must be properly answered.

1. What is the learning outcome of Coop program?

2. What is the effect of various types of in-school preparation on the learning outcomes of field-experience education?

3. How can a proper mix of work-experience and course work be achieved so that students as well as industries as well as BCIT could derive maximum benefits?

4. How do different roles and relationships among teachers, industry supervisors and students affect learning outcomes? i.e. Should teachers or industry supervisors assume major responsibility for a student's in-field learning? What are financial and other implications of either model?

5. What benefits could industry derive from Coop program, and how to sell the idea to industry.

6. How would student be affected in terms of length of his BCIT education? How can he be convinced of the benefits.

7. How would Coop education affect our faculty in terms of their work-load, holiday pattern, etc.

8. What is the true capacityof industry to absorb learners? What could be some of their problems? What are their needs in terms of manpower?

9. What diverse categories of positions within an industry in B.C. are available to accomodate learners in various stages?

10 What kind of funding is available at local, Provincial and federal levels for starting and for continuing coop programs? Could Provincial Ministry of Education and Ministry of Industry be influenced to make more money available for specific programs? How would funds affect the assimilative capacity of industry?

11 How can BCIT cooperate with CAFCE in evolving an agency for nation-wide placement of Coop students. Such agency can be a joint effort of educational institutions, industry and Canada Manpower.

Paul Parikh
Sept. 19, 1977

Dr. V. M. Parikh
1977-09-29

COOPERATIVE EDUCATION STUDY - Flow Process

Once certain technologies have been identified as suitable for initiating pilot project in cooperative education, the FLOW PROCESS given below is recommended.

1. Determine Support

   A. Other departments at BCIT
   B. Students and Instructors in the selected Program
   C. Industry, Business and Services
   D. Labour Unions
   E. Provincial Govt. - Ministries of Education, Labour, and Health
   F. Federal Govt. - Ministry of Manpower and Immigration

   (Prepare and Print literature to educate various groups named above and establish personal contact with as many leading personalitites in each group as possible.)

2. Evaluate Scheduling Possibilities

   A. Time of Year
   B. Number of Weeks
   C. Block time versus semester (term)
   D. Costs
   E. Instructor's work load and responsibilities
   F. Coordination needs

3. Work with Selected Departments for Curriculum Development

   A. Courses added
   B. Courses deleted
   C. Courses revised

4. Meet with Advisory Committee

   A. Information
   B. Recommendation and Support

5. BCIT Administration and Board Reaction

   A. Submit proposal as working paper
   B. Discussions for Changes and Recommendations
   C. Revised Proposal

6. Submit Proposals to Ministries Concerned

7. Determine Supervisor/Instructor

8. Implement Pilot Group

9. Evaluate Pilot Group

10. Expand Cooperative Education Offerings

B.C.I.T. - TASK FORCE ON COOPERATIVE EDUCATION

Dr. V.M. Parikh
1977-10-20

POINTS TO BE ADDRESSED TO DURING THE FEASIBILITY STUDY

1. ORGANIZATION AND DESIGN

i) Student enrollment term

a) Single or double intake

b) Fall/Winter or Fall/Fall or Fall/Summer intakes

ii) Length of enrollment

a) Two years plus summer in between

b) Two years plus two summers

c) Two years plus two summers and fall term

iii) Time with employer

a) Summers only

b) Continuous position with employer filled by rotating students

c) Number of work periods per student

d) Length of each work period

e) Alternate option when jobs are not available

iv) Rotation between Employers

a) Student completes all work periods with the same employer

b) Student is required to change employer for each work period

c) Flexible-left with the department and the employer

v) Goals and Objectives

a) What are the goals of a training program in a given technology

b) What specific learning goals (objectives) can be achieved at the Institution

c) What learning objectives can be achieved on the job

vi) Assessment and Evaluation

a) Evolving measurable criteria for on-the-job learning objectives

b) Forms for evaluation of learning objectives

c) Learning contracts with students

d) Assessment by instructor/coordinator

e) Assessment by employer

vii) Academic Credits

a) Learning contracts and scope of academic credits

b) Should specific credits be assigned to work-experience?

c) Should completion of work-terms be assessed simply on pass/fail basis instead of giving credits?

d) If credits are to be given what criteria can be established.

e) Recording work-experience in diploma/transcript.

viii) Blocking and Cycling of Courses

a) Which courses in a given technology can be cycled?

b) Which courses in a given technology can be block-offered?

c) Which courses in a given technology can be modified to match those given in other technologies.

d) How will, blocking, cycling and modification affect teaching load in co-op participating and non-participating departments.

ix) Staffing in Teaching Departments:

a) Five-year time table of course offerings

b) Five-year projections of teaching loads

c) Summer school instructors

d) Seasonal instructors

e) Yearly teaching load and unequal distribution of instructor's load during the normal year.

x) Department of Co-operative Education

a) Structure of Co-op department

b) Criteria for departmental coordinators

c) Coordinator's job description, and his responsibilities to the director of co-op education

d) Students/coordinator ratio

xi) Staff Society

a) Union's view on year-round operation

b) Coordinators and their relation to Staff Society

c) Creating additional positions

xii) Mechanism of Preparing Students for Work

a) Formal course in interviews, resume writing, etc.

b) Group seminars and personal counselling

2. COOPERATING EMPLOYERS

i) Information and Education

a) Gathering information on employment opportunities for BCIT Graduates

b) Sending cooperative education information to employers

c) Seminars for employers

d) Surveying employer's needs and attitudes

e) Personal visits to prospective participants

ii) Agreements and Contracts

a) Contracting permanent positions with employers

b) Reaching agreements on duration of employment and duties and responsibilities of employers and employees

c) Preparing and signing legal contracts

iii) Payment Schedules

a) Salary scales for students-regular scale or minimum wage

b) Employer's processing costs and its effect on students salaries

c) Effect of the length of-work-term on productivity

iv) Learning Objectives during Working Term

a) Employers role in determining these objectives

b) Institute's obligations in meeting on-the-job objectives

c) Breadth of occupational opportunity

v) Termination of Agreements or students for cause or economic pressure

a) Timing of termination of agreement

b) Procedure for terminating an employee

c) Possibilities of alternate arrangements

vi) Rotation within company assignments

vii) Employer's labour unions

3. STUDENTS AND PROGRESS

i) Informational strategy, student newspaper and questionnaires.

ii) Role of Student Association and Student Societies.

iii) Should cooperative education be optional or mandatory.

iv) Selection process and criteria.

v) Seminar participation.

vi) Student's history of placement and persistence.

vii) Causes for campus staff termination of students.

viii) Career Counselling and job-seeking training.

4. COSTS AND FINANCES

i) Costs per student.

ii) Student fees during work period.

iii) Financial Assistance during pilot stage

iv) Funding from Federal Government.

v) Foundations and Industrial support.

vi) Cooperative Education Department Costs

a) Director's office and clerical support

b) Coordinator's salaries

c) Publicity, Information and Travel

d) Indirect costs in terms of administrative support, plant use, etc.

5. PUBLICATIONS AND OTHER

i) Brochures, newspapers, promotional.

ii) Promotion through industry/business community, clubs, advisory councils.

iii) Promotion through national certifying agency.

iv) Media support.

v) Alumni support.

vi) Program evaluation criteria.

vii) Promotional literature for Parents.

6. MISCELLANEOUS AREAS

i) Recordkeeping system.

ii) Liability Insurance for Coordinators.

iii) Legal responsibilities - unemployment Insurance

APPENDIX Q

TFCE DATA FORM 4 - STUDENTS

1978-02-02

Dear BCIT Student:

BCIT is now considering adopting "Cooperative Mode of Education"for some of its students. Under this mode, students rotate periods of full-time study with periods of full-time paid employment to enrich their learning program. They could receive special diploma to include credit for the technology related experience on the job. Rather than working and studying simultaneously, as many post-secondary students now do, programs can be developed which would allow students to alternate "Terms" of full-time study with terms of full-time employment.

Accurate information about students' experiences and interests is essential for a feasibility study in this matter. Please devote a few minutes right now to respond sincerely to the following questions. Use the attached "Standard Answer Sheet" and a pencil for your responses. You need not identify yourself and may not give your name and identification number. Comments, if any, may be given on the back side of the sheet.

TFCE - DATA FORM 4 - STUDENTS

1978-02-02

Many students take a "break" in education for a period of time during their college years and later return to classes. If you have stayed out of college/university/institution/ high school for one or more terms (excluding summers), will you indicate all of the following reasons that most nearly match your reasons for a break in education. If you have never taken a break in education, please check 'T' for question 1 and proceed directly to question 18. If not, check F for question 1.

1. I have never taken time off from my education (except for summers). I took "break"in education because:

(check as many as apply using true/false response for each question number provided).

2. I wanted to travel.

3. I was tired of going to school and needed a break.

4. I had to make money

5. I was bored and "turned off" by my school work.

6. I needed time to deal with personal/family matters.

7. I found a good job and didn't think that further education was necessary.

8. I was getting poor grades.

9. I was over-worked going to school and working at the same time.

10. I didn't like the program I was taking.

11. I didn't like the school/college I had joined.

12. I lost my job and/or I lost my financial aid.

13. I felt that my course work had very little to do with the rest of my life.

14. I couldn't see how my school work was going to help me get the kind of employment I wanted.

15. I had a full-time job offer I couldn't pass up.

16. I moved from my school/college district.

17. Other

Do you believe that academic credits should be given for learning which occurs through a job experience with an agency or employer off-campus?

(Please check either yes or no to each item)

18. Full-time (a) Yes (b) No

19. Part-time (a) Yes (b) No

20. Paid (a) Yes (b) No

21. Volunteer? (a) Yes (b) No

22. To what extent are you now working?

a) Full-time b) Part-time

c) Volunteer work d) Work as part of the requirement of my BCIT program

e) Not working in the tradional sense

23. Would you be interested in full-time, paid employment for one or more semesters during your BCIT education, in a challenging position closely related to your technology?

a) Yes b) No c) May be

If you answered "yes" to Question 23, which of the following match your reasons for your response (please check as many as apply using true/false response).

24. It will be hard to get job in my field without experience.

25. I think I could learn skills on the job that I can't get in school.

26. I need to make money during my college years.

27. Experience now will help me transfer to a four-year University.

28. Experience now will help me get a better job when I complete my certificate/program.

29. Presently I work during part of the day (or weekends) and study rest of the time. Instead, it will be better if I could study full-time during a term and work full-time during another.

30. Experience now will help me decide if I want to continue in the career I am considering or have chosen.

31. Employment periods now in my field will help me establish contacts with "professionals" and permanent employers.

32. I realise that integrating study and job related experiences could prepare me better for my career.

33. I have absolutely no work experience in my field and would like some before I finalise my career plans.

34. Other

If you answered "No" or "May be" to Question 23, which of the following match your reasons (please check as many as apply).

35. I already have job experience in my technical field.

36. I have <u>assured</u> summer jobs related to my technical field.

37. I am eager to complete my degree/diploma as quickly as possible.

38. I do not want paid employment periods during my study at BCIT if they were to extend total duration of my program by (a) even a few weeks (b) three months or less (c) more than three months (d) one year or more.

39. I do not see how job experience in my field can improve my training program.

40. My BCIT program presently requires a total of (a) less than 4 weeks, (b) 4 weeks to 8 weeks (c) more than 20 weeks of job experience (d) paid (e) unpaid employees. This arrangement is perfectly satisfactory to me.

4. Do you qualify for financial aid

a) Yes, I do get Provincial financial aid.

b) I tried for financial aid but was unsuccessful.

c) I don't know but I think I do.

d) I don't know but I doubt it.

e) No.

42. Student status

a) Full-time day student

b) Part-time day student

c) Full-time evening student

d) Part-time evening student

43. Sex: (a) Female (b) Male

44. Age: (a) Under 25 (b) Over 25

45. Marital Status: (a) Married (b) Single

46. Permanent Residence:

(a) Lower Mainland, Greater Vancouver Area

(b) Outside B.C.

(c) Vancouver Island

(d) Northern B.C.

(e) Interior B.C.

Your Current Program at BCIT

Business Div.	Engineering Div.	Health Div.
47. Administrative Mgt.	54. Building	66. Medical Laboratory
48. Broadcast Comm.	55. Chem. & Met.	67. Medical Radiography
49. Computer Prog.	56. Civil & Structural	68. Nuclear Medicine
50. Financial Mgt.	57. Electrical & Electronics	69. Registered Nursing
51. Hotel Motel	58. Biological Sciences	70. Psychiatric Nursing
52. Marketing Mgt.	59. Forestry	71. Biomed Electronics
53. Operations Mgt.	60. Forest Products	72. Health Data
	61. Nat. Gas & Petroleum	73. Environmental Health
	62. Instrumentation	
	63. Mechanical	
	64. Mining	
	65. Surveying	

APPENDIX N

Summary of federal support for post secondary cooperative education in the United States 1970-1977*

	1970	1971	1972	1973	1974	1975	1976	1977**
Number of Coop Schools in U.S.	795	271	311	566	759	954	1,017	1,180
Number of Coop Students in U.S.	30,000	35,000	38,000	80,000	140,000	165,000	190,000	-
Number of Institutions receiving federal funds for Coop	80	103	92	412	427	390	293	267
Total Amount Granted for:								
a) Administration	$1,457,278	$1,575,000	$1,655,000	$10,000,000	$10,000,000	$10,000,000	$ 9,968,000	
b) Training	$ 75,000	$ 25,000	$ 45,000	$ 580,000	$ 533,000	$ 503,000	$ 612,901	
c) Research	NIL	NIL		$ 170,000	$ 197,000	$ 247,000	$ 119,044	
Total	$1,532,278	$1,600,000	$1,700,000	$10,750,000	$10,750,000	$10,750,000	$10,699,945	$12,212,631

*Source: Cooperative Education Awards, 1970-76. U.S. Department of Health Education, And Welfare/Office of Education, Bureau of Post Secondary Education, p. 4.

**Updated information supplied by U.S. Department of H.E.W.